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**DECISION-MAKING
IN NATIONAL SECURITY AFFAIRS:
TOWARD A TYPOLOGY**

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A thesis presented to the Faculty of the
US Army Command and General Staff College
in partial fulfillment of the requirements
for the degree

MASTER OF MILITARY ART AND SCIENCE

by

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The 'operational code' construct is proposed as a concise means to depict the central beliefs which guide decision-making behavior and thus suggest modeling parameters. The 'code' is operationalized by the assignment of value continua along dimensions reflecting its content, which ultimately combine to form an 'operational code profile'. The profile is then heuristically reduced by inferences of relative centrality and interdependence of component beliefs to a minimum essential set. Representative profiles are devised to reflect the ideal characteristics corresponding to each of the models under investigation.

Three national security decision-makers whose operational codes have been studied are selected for analysis. Operational code profiles are developed for Secretaries of State Byrnes, Acheson, and Dulles, and conformance noted with those of the cybernetic, analytic, and cognitive decision-maker, respectively. The historical record is reviewed in the case of Byrnes as a preliminary assessment of the utility of the typology.

The study concludes that a typology of decision-making based upon the operational code profile furnishes a potentially useful methodology for the analysis of national security decision-makers and decisions, and with additional refinement may have broader applications in adequately modeling the decision process for review and analysis.

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ABSTRACT

DECISION-MAKING IN NATIONAL SECURITY AFFAIRS: TOWARD A TYPOLOGY,
by Major H.D. Crawford Jr., USA, 185 pages.

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INTRODUCTION

The formal study of decision-making attracts continuing attention across a wide range of disciplines; in political science, this attention has focused upon efforts to obtain a better understanding of the national security policy-making process in general, and of specific decisions arising therefrom in particular. This focus has given rise to a sizeable body of literature on foreign policy generally grouped under the rubric of 'bureaucratic politics', which borrows heavily from organization theory, cognitive psychology, systems analysis, and other fields in its attempt to construct reasonably comprehensive models or at least paradigms of the decision process. The principal emergent models - analytic, cognitive, and cybernetic - have been uniformly characterized as complementary rather than competitive in nature, so that applicability of each perhaps varies according to some combination of situational variables as yet undisclosed. Since a given policy represents in some sense an aggregate of the preferences of individual policy-makers, an obvious variable of primary interest is the decision-maker himself; the present effort, then, represents an attempt to obtain parsimonious means by which the decisional behavior of key individual actors in the national security arena may be explained and/or predicted within the framework of existing theoretical models.

The normative study of decision-making has deep roots in the applied sciences. From elemental mathematical treatises motivated by scholarly interest in the human thought process, whole fields of study have sprung over time, which have in turn added their own contributions to the sum of scientific knowledge. Theoretical works such as Boole's *The Laws of Thought* and Savage's *The Foundations of Statistics* are of broad, even philosophical import in establishing the basic conceptual framework within which hypotheses may be developed and inferences drawn, while reference works such as Howard's, et al, *Readings In Decision Analysis* are of considerable value in reviewing major findings and relating their significance to the fields they affect. Specific areas of inquiry arising from and impacting upon the quantitative study of decision-making are replete with texts recounting the basic principles and tools of calculus, differential and difference equations, probability theory, statistics, stochastic processes, game theory, linear programming, network and graph theory, time series analysis, and the like. The discipline of decision analysis is a relatively recent development whose principal proponents have opened a meaningful dialogue to formulate their tools within the context of the individual decision-maker. In *Games and Decisions*, Luce and Raiffa ponder means to quantify uncertainty, a focal element of the modeling process and key determinant of the basic nature of probability assessment. Luce ponders the topic further in *Individual Choice Behavior*, and Raiffa in *Decision Analysis*.

Howard and his colleagues provide additional insights in a series of manuscripts and articles compiled in *Readings in Decision Analysis*, beginning to draw upon the studies of cognitive psychologists for more rigorous treatment of the individual process of choice.

Psychological inquiries into decisional behavior generally recognize as seminal the work of Leon Festinger in *A Theory of Cognitive Dissonance*. The characterization of choice as the product of interaction of and compatibility with basic beliefs is discussed in various respects by Edwards and Tversky in *Decision Making*, and elaborated on in a series of articles highlighted by the contributions of Tversky, Kahneman and Langer. This school of thought has in turn motivated sociologists to apply its basic precepts to enhance the study of organizations. The classic dicta of Taylor's *The Scientific Principles of Management* have thus been challenged in repeated instances by March and Simon in *Organizations*, by Simon in *Administrative Behavior*, by Cyert and March in *A Behavioral Theory of the Firm*, and by Lindblom in *The Policy-Making Process*, inter alia.

The impact of behavioralism on political science has provided in itself a subject of considerable debate in the literature. In *Foreign Policy Decision Making*, Snyder, Bruck, and Sapin established a basic framework for formulating the national security policy process in behavioral terms, but the skeleton

lacked much in substance, as Paige noted after a sustained effort to apply it to *The Korean Decision*. The writings of scholars returning from government service, however, lent persistent credibility to the approach; Hilsman's *Policy Making in Defense and Foreign Policy* laid early groundwork for Allison's dissection of the Cuban missile crisis in *The Essence of Decision*, and with Halperin's *Bureaucratic Politics and Foreign Policy* the study of 'bureaucratic politics' gained recognition as an important means to facilitate understanding of the collective decision-making process. Additional behavioral insights at the international level have been provided by de Rivera in *The Psychological Dimension of Foreign Policy* and by Jervis in *Perception and Misperception in International Politics*.

The study of individual political decision-makers through the behavioral lens owes much to the George biography of Woodrow Wilson, and George's subsequent formalization of the concept of the 'operational code'. In *Enemies in Politics*, Finlay, Holsti and Fagen explored cognitive impacts on decision-making, and a cognitive 'mapping' construct was formalized by Axelrod, et al, in *The Structure of Decision*. Further detailed treatment of the cognitive model is given by Steinbruner, who also proposes the cybernetic model in *The Cybernetic Theory of Decision*. A number of case studies have been undertaken by these and other authors employing the various models under discussion to characterize the behavior of individual and collective decision-making entities.

Decision-making under stress and governmental crisis behavior are phenomena which have spawned a considerable literature of their own above and beyond general treatments of the decision process. This literature concentrates largely upon the cognitive impact of stress and the influence of environmental variables, and thus tends to draw upon the results of psychology on the one hand, and mathematical system simulation on the other. Hermann's *Crises in Foreign Policy: A Simulation Analysis* and Choucri and North's *Nations in Conflict* are prominent examples of the latter, while Brecher's *Decisions in Crisis* and Janis and Mann's *Decision Making* propose several variants of the cognitive paradigm in the former category. Holati explores both cognitive and environmental variables in *Crisis, Escalation, War*, and further exploits results of communication theory to incorporate this crucial factor in intra- and intergovernmental crisis dialogue. Hermann summarizes many of the important findings of behavioral research in *International Crises*; a similarly valuable collection is presented in Falkowski's *Psychological Models in International Politics*. Stein and Tanter, while considering a crisis situation in *Rational Decision-Making: Israel's Security Choices, 1967*, provide a highly valuable discussion of analytic, cognitive and cybernetic processes and their potential variation among the successive stages of decision-making. Perhaps the most comprehensive single collection of crisis case studies is offered in George and Smoke's *Deterrence in American Foreign Policy: Theory and Practice*.

The initial task at hand is to distill from the literature outlined above the essential features of its principal generic paradigms and attendant models: the analytic, cognitive, and cybernetic. From this discussion emerge the key behavioral characteristics associable with each model, to facilitate meaningful comparisons with the corresponding characteristics of actual decision-makers. To this point, such comparisons have largely been conducted directly on a case study basis to illuminate specific situations and outcomes; the object here, however, is to determine systematic means of association between decision-maker and model, so that streams of events over time influenced by the actor's behavior may be analyzed in a more comprehensive fashion.

The 'operational code' construct refined by Alexander George is proposed as a concise means to depict the central beliefs which guide decision-making behavior and thus suggest modeling parameters. In order to realize this potential role, however, it is necessary to evoke from the 'code' an explicit representation of its contents which can be systematically constructed both for the 'ideal types' arising from the models and for selected actors whose operational codes have been determined through previous studies. To this end, value continua are devised along twenty-four dimensions reflecting the components and sub-components of the five 'philosophical' and five 'instrumental' beliefs comprising the code. A given belief can of course exhibit any range between logical extremes in practice, but need be characterized

here only in the trichotomy of values required to distinguish the three models considered. Based on the nature of the belief and the corresponding properties of the respective models, then, each continuum is assigned an analytic range, a cognitive and a cybernetic one, resulting ultimately in an 'operational code profile' of each 'ideal-type' decision-maker.

The profile is concurrently examined for relative centrality of the beliefs depicted to the specific task of predicting decision-making behavior. Heuristic inferences suggest that some components of the operational code are less important than others in this regard. Further, assertions are formulated to suggest an interdependence between combinations of beliefs in the same context, so that a reduced set of six dimensions is finally deduced as a potentially minimum essential set. Case studies are reviewed using the full belief set, in part to review assertions of interdependence against observed belief patterns, and in part to demonstrate the value of the relative parsimony attainable through the determination and application of an equivalent - or at least sufficient - reduced belief set.

Operational code studies are available at this juncture on only a handful of key decision-makers; indeed, one of the most optimistic objectives of this study would be to promote broader undertakings in this area. Fortunately, several of those which have been conducted touch the field of national security affairs

to be addressed here. In selecting cases among these for analysis, the principal objects at such an embryonic stage are necessarily to control as many variables as possible, and to seek candidates who might reasonably be expected a priori to furnish examples conforming to each of the major models investigated. On these bases, operational code profiles are developed for Secretaries of State Byrnes, Acheson and Dulles, thus controlling for major disparities in time and role, and ultimately yielding favorable comparisons to expected patterns of the cybernetic, analytic and cognitive decision-maker, respectively. Source material employed in formulating the profile varies from the formal operational code study only in the case of Byrnes, where a surrogate is available in the form of a 'psycho-biography' of the sort motivated by George's Wilson study, and in which elements of the operational code are thus implicitly imbedded for deduction.

The favorable results obtained in these cases motivate at least a cursory examination of the utility of the decision-making typology generated by the operational code profile as a vehicle to illuminate a review of historical events, and thereby provide some indication of the descriptive and explanatory, if not predictive, value of the methodology. The cybernetic model is applied to an examination of Byrnes' major official activities and initiatives as Secretary of State, recalling a pattern of behavior with crucial implications for postwar American national security policy, prominent features of which are satisfactorily

explained only within the framework of the cybernetic paradigm. This finding provides a strong preliminary indication that the operational code profile yields a characterization of the national security decision-maker which is both realistic and concordant with observed behavior.

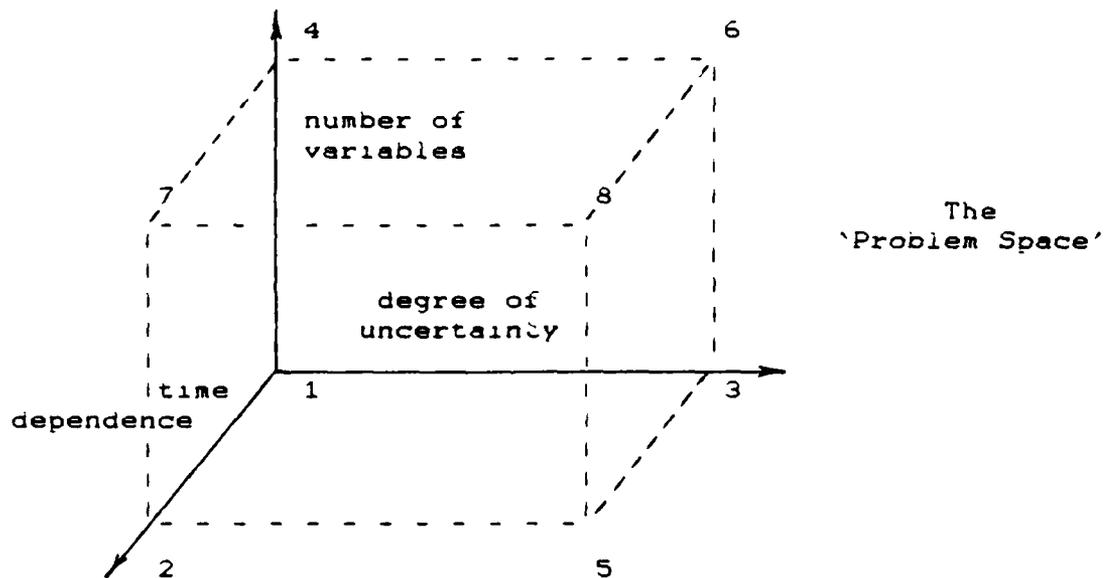
The potential applications of a coherent methodology for the analysis of decision-making behavior are formidably broad. The subject in at least normative manifestations pervades military doctrine as well as business and various applied engineering disciplines, and descriptive and explanatory inquiries are a major focus of most of the social sciences. To the extent that the individual is important as a unit of analysis - a premise which has been cogently argued elsewhere, and is assumed self-evident here - progress in understanding the complex outcomes of national security policy is well served by research at the decision-making level. This study represents an embryonic effort to sort out some of the major issues and propose a general framework of inquiry, necessarily raising more questions than it answers in the bargain. But if the pages which follow contribute justification and motivation to further efforts aimed at these questions, they will have served their purpose.

CHAPTER 1

THE MODELS

At the most general level, the individual decision process appears to involve two relatively distinct stages: that of formulation, and that of solution. To relate to more detailed conceptualizations, 'formulation' may be considered to include those steps contributing to the structuring of the problem, such as 'diagnosis' or 'definition of the situation' and 'modeling' or 'search'; 'solution' refers in turn to those measures taken to reach a decision within the formulated structure: 'revision' or additional 'information gathering', 'evaluation' or 'analysis', and 'prescription' or 'choice' or 'decision rule'. Implied, of course, are measures for iteration through these stages, where revision, for example, may dictate reformulation, and so on. This framework will suggest a certain complementarity in emphasis among the models discussed: cognitive and cybernetic models seem to focus primarily on formulation, while analytic models are oriented primarily toward solution. Since the actual decision process necessarily involves a full measure of both stages, these characteristics of the existing models may in themselves provide fertile ground for further development. The principal motive supporting a review of the models themselves, however, is to evoke the key features distinguishing each in a manner which will facilitate comparisons with the corresponding features of actual decision-makers.

It actually makes little sense to speak of a single 'analytic model' in a general sense; there of course exists a broad range of techniques and methods of an analytic character from which decisional problems may be addressed. Accordingly, we must consider that area of the 'problem space' in which the problem lies. This space has been defined along the three dimensions of variable content, uncertainty, and time dependence, in the manner of the following:



In the first corner, a few-variable, static, deterministic problem might readily be treated with the tools of basic algebra or calculus. As time dependence is introduced along the axis leading to (2), differential equations become a useful technique. Along the horizontal axis, the few-variable, static, probabilistic problem of (3) is treated by basic probability theory, while

the many-variable problem arising at (4) lies in the realm of multivariable calculus and linear programming. As we leave the axes to consider problems in more than one dimension, more sophisticated techniques become necessary. The theory of queueing and stochastic processes addresses the few-variable, dynamic, probabilistic case of (5), while multivariate statistical methods may be applied at (6), and (7) suggests the use of control theory or dynamic programming. Finally, we come to (8), the many-variable, dynamic, probabilistic problem, and find that, while some techniques such as Markov processes might be useful, "it is more a matter of patching together approximations to obtain a useful representation."¹ But this is precisely the common case of complex decision-making under uncertainty addressed by the cognitive and cybernetic models, and it is here that the science of decision analysis provides what exists of an analytical model for the rational treatment of decisional problems.

Virtually none of the analytic techniques discussed offer significant guidance in the stage of formulation, assuming instead sufficient acumen, or, more likely, practice, on the part of the decision-maker to readily identify and catalogue all relevant values, process variables, and resultant outcomes, and

¹ Ronald A. Howard, "The Foundations of Decision Analysis." IEEE Transactions on Systems Science and Cybernetics, vol SSC-4, Sep 1963; p. 395.

fit them to the appropriate procedure: "When we first encounter him in the decision-making situation, he has already laid out before him the whole set of alternatives from which he will choose his action. This set of alternatives is simply 'given'; the theory does not tell how it is obtained."² Decision analysis, as the analytic model of primary interest, does provide limited formulative treatment of an heuristic sort: "Analysis serves as a stimulus for the decision-maker and his staff to think hard, at a time when it counts, about new, viable alternative actions."³ By 'thinking hard', then, limited value integration is attempted through quantification and resultant preference-ordering of relevant outcome variables. The major assumption is that these variables and preferences are well-defined and readily identifiable: "the subject is assumed to have an underlying stable knowledge of the quantity under investigation."⁴ The key point is that ordering presupposes the ultimate establishment of a single comparative value dimension, usually though not necessarily expressed in monetary terms. Integration at this level has proven a challenging enterprise, even in prescriptive economic applications: "Perhaps the widest

² James G. March & Herbert A. Simon, Organizations. New York: John Wiley & Sons, Inc., 1958; p. 137.

³ Howard Raiffa, Decision Analysis. Reading, MA: Addison-Wesley, Inc., 1968; p. 269.

⁴ Carl S. Spetzler, "Probability Encoding in Decision Analysis", in Ronald A. Howard, et al, Readings in Decision Analysis. Menlo Park, CA: Stanford Research Institute, 1977; p. 411.

gaps between theory and practice are in the area of values and preferences."⁵ Some cognitive psychologists have been drawn to seek less demanding variants on the model, such as Tversky's 'elimination-by-aspects' approach,⁶ which compares alternatives in terms of shared or unshared desired aspects. Still, integration and preference-ordering at the aspect level is required, which may prove little less of a challenge than the original conceptualization. Luce has proposed a stochastic definition of preference which relies on relative frequency of selection as a determinant of value⁷; this approach, of course, introduces an additional dimension of uncertainty into the problem, as well as imposing ominous data requirements on the potential analyst.

The above discussion deals with what Tversky calls 'internal uncertainty', or the uncertainty of preferences. The more obvious phenomenon, perhaps, is 'external uncertainty', or the uncertainty of outcomes. This type of uncertainty is controlled in the analytic model by probability assessment of relevant outcomes, which provides a basis for calculation and comparison of expected payoffs for available strategies. The technique of probability assessment has itself produced a major split in

⁵ James E. Matheson, "Decision Analysis Practice: Examples and Insights", in Howard, et al, op. cit.; p. 183.

⁶ Amos Tversky, "Elimination By Aspects." Psychological Review, vol 79, #4, 1972; pp. 281-299.

⁷ R. Duncan Luce, Individual Choice Behavior. New York: John Wiley & Sons, Inc., 1959; pp. 132-176.

decision theory regarding the basic nature of probability distributions: do they represent an underlying state of nature, or simply a reflection of the state of knowledge (and, conversely, the state of uncertainty) of the assessor? Raiffa provides an excellent historical account of the divergence between 'objective' and 'subjective' probability theory,⁸ which dates back to the early work of Bernoulli and Bayes, but the substance of the dispute is perhaps best conveyed in the Luce and Raiffa discussion of "certainty", "risk", and (total) "uncertainty".⁹ The concept of a decisional situation in which all outcomes are well-defined and determined with certainty from the set of alternatives is unambiguous and a matter of general consensus between the schools: unfortunately, in the context we are considering, it is equally rare. The subjectivist view of decision-making under risk holds that probability distributions over the set of outcomes are determined by the level of certainty which the decision-maker can assign to the occurrence of each outcome, based on his specific knowledge of the situation at hand: "Probability is a state of mind, not of things"¹⁰ Under this view, the situation of 'total uncertainty' reduces simply to a special limiting case of risk, in which all outcomes are

⁸ Raiffa, op. cit.; pp. 273-288.

⁹ R. Duncan Luce and Howard Raiffa, Games and Decisions. New York: John Wiley & Sons, Inc., 1957; pp. 12-23.

¹⁰ Ronald A. Howard, "The Science of Decision-Making", in Howard, et al. op. cit.; p. 151.

necessarily viewed as equally likely, and are thus assigned equal probabilities. This "principle of insufficient evidence" approach seems to obtain the strongest support of those presented by Luce and Raiffa for the treatment of uncertainty, although alternative possibilities are presented, and the problem of variable delineation observed.¹¹ In the latter case, 'equally likely' outcomes may be strongly affected by the scope of their definition: in attempting to predict a state change in an object at rest, for example, the equally likely outcomes defined by 'remain at rest' and 'move' are not the same as the equally likely outcomes defined by 'remain at rest', 'move to the left', and 'move to the right', despite the fact that 'remain at rest' describes the same state (outcome) in both cases. Accordingly, the subjectivist view of total uncertainty as a limiting case of risk, while eminently consistent and practical, does present potential difficulties in logical construction. The counterpoint is presented briefly by March and Simon,¹² and at length by Palumbo.¹³ In the objectivist view, a situation of risk occurs only when the set of outcomes is known to obey a probability distribution derived either as a concrete property of the set or a well-established relative frequency; any less well-defined

¹¹ Luce and Raiffa, op. cit.; pp. 284-285.

¹² March and Simon, op. cit.; pp. 137-138.

¹³ Dennis J. Palumbo, "Organization Theory and Political Science", in Greenstein & Polsby, eds., Handbook of Political Science. Reading, MA: Addison-Wesley, Inc., 1975; vol 2, pp. 335-350.

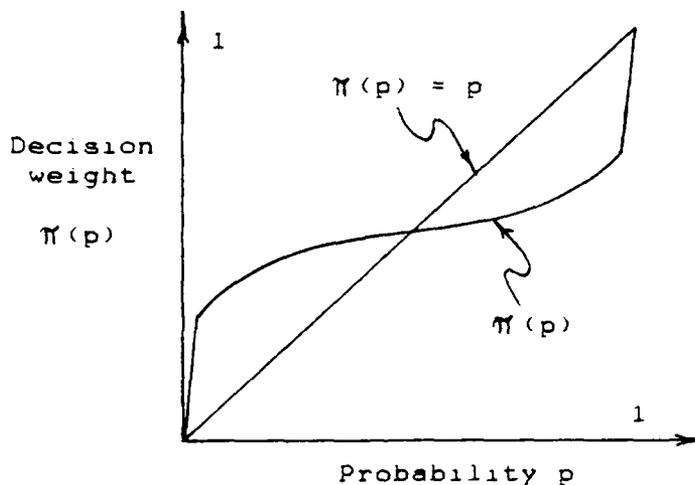
situation produces uncertainty, and the resulting assertion that the problem cannot be treated analytically. It might be argued, however, that the notion of 'subjective probability' arises as a natural extension of the 'objective' case, for, particularly in the case of relative frequency, the boundaries between the positions may not be entirely clear. A simple but potent example is provided by Ellsberg's paradox: consider two urns, one known to contain 50 red balls and 50 blue balls, and the other filled at random with 100 balls from a large supply of both red and blue balls; given that you receive some prize for plucking a red ball, from which urn do you choose to draw? Subjectivists and objectivists would agree that both cases represent valid probability distributions: in the first case, the event 'red' characterizes one-half the space of possible outcomes, and in the second, sampling theory assures a relative frequency of one-half for the event 'red' for a random sample of this size; the exact fraction may be more or less than one-half, with equal probability. Despite the agreement of statistical indifference, however, psychologists have established a persistent 'ambiguity effect', whereby subjects tend to choose the first case as more well-defined and thus somehow offering the greater probability of success.¹⁴ This phenomenon both underscores the vagueness of the purported boundary between the notions of 'subjective' and 'objective' probability and reinforces the assertion that

¹⁴ Daniel Ellsberg, "Risk, Ambiguity, and the Savage Axioms." Quarterly Journal of Economics, #75, 1961; pp. 696-699.

probability is, at least perceptually, a state of knowledge rather than a detached property; a perceived higher state of knowledge in the first case induces a higher 'subjective' probability assessment.

The complement of probability assessment in the analytic formulation process is the determination of the risk attitude of the decision-maker. By deriving a 'utility function', outcome values may be weighted by the amount of uncertainty tolerable in their pursuit. This derivation is accomplished through the location of successive points of indifference between a given value and a gamble or 'lottery' with fixed probabilities yielding greater and lesser values; thus risk attitude is measured by its impact on perceived outcome values. This 'unidimensional' approach lacks an account of the impact of risk attitudes on probability assessments, a phenomenon widely reported in a variety of situational contexts. Let us return to the Ellsberg example: agreeing that the probability of success with the first urn is indeed .5, the subject making that choice implicitly assigns a 'subjective' probability of something less than .5 to the event 'red' in the second urn. But suppose we now offer the same choice predicated on the outcome 'blue'? If the subject again chooses urn 1, as we would expect, then an assessed probability of less than .5 for 'blue' in urn 2 is now inferred. But now the total space of outcomes for urn 2 has been assigned probabilities which sum to less than unity. This phenomenon,

labeled 'subcertainty' and treated briefly by Raiffa,¹⁵ has prompted the development of a 'prospect theory' alternative, in which the utility of a 'prospect' is determined as a composite of weighted probabilities and weighted outcome values; the latter are the familiar utilities, determined from fixed probabilities, while the former, termed 'decision weights', are determined from fixed outcome values.¹⁶ Kahneman and Tversky report experimental results indicating that low probabilities are typically overweighted, consistent with the continuing popularity of such pursuits as insurance and sweepstakes, whereas high probabilities are typically underweighted, as the 'subcertainty' phenomenon would suggest. A typical decision weighting function might thus resemble the following:



¹⁵ Raiffa, op. cit.; pp. 108-114.

¹⁶ Daniel Kahneman & Amos Tversky, "Prospect Theory: An Analysis of Decision-Making Under Risk." Decision Report #77-X, 1977.

As the sketch suggests, the function may be very badly behaved around the endpoints. Observing a 'certainty effect' predicated on Savage's 'sure thing' principle, for example, the authors noted a marked increase in the increment from high probability to certainty; a particularly cogent example is given by the situation of Russian roulette, with a fixed 'value' of life. Would you pay more (have a higher utility), the question goes, to reduce the number of bullets in the gun from four to three, or from one to zero? Typically, of course, the latter is chosen. At the other extreme, similarly, a priori 'low' probability may be assessed as negligible, and thus be assigned zero weight. Elsewhere, the potential interaction between probability and outcome has been implied as well; Langer, for example, reports an 'illusion of control' whereby higher probability assessments occur in decisions with random outcomes when a perceived (but nonexistent) measure of skill is induced.¹⁷ The sum of these findings would suggest that analytic risk attitudes, while not indeterminate, may be of an even higher order of complexity than is currently treated by the analytic model.

The cybernetic model simplifies matters greatly in posing the process of formulation. Values are minimally articulated and limited to those essential to the preservation of the 'organism':

¹⁷ Ellen J. Langer, "The Illusion of Control." Journal of Personality and Social Psychology, vol 32,#2, 1975; pp. 311-328.

attention focuses accordingly on a few key variables associated with these values, and the need for direct outcome calculations is obviated entirely by the situational application or "mating"¹⁸ of preprogrammed 'recipe' or 'SOP' responses. The original source of this 'repertoire' of alternatives is, unfortunately, no better specified than in the analytic case. Discussing a variant of the paradigm in an organizational context, it is eminently convenient for Simon¹⁹ and March²⁰ to attribute the generation of 'programs' to "the organization". Steinbruner supposes instead that alternatives in an unfamiliar situation are initially selected at random, then reinforced through the processes of revision and feedback to be discussed shortly.²¹ Complexity is handled simply by fragmentation of the problem and proliferation of decision-makers, so the process of decision-making at the individual level remains a very simple one. The contextual limitations of this model are readily apparent, but its parsimony is appealing, and its basic thrusts probably painfully familiar to anyone exposed to routine operations in a large bureaucracy, conditions which have motivated the study of 'bureaucratic politics' and contributed many of the precepts of the model.

¹⁸ Richard M. Cyert & James G. March, A Behavioral Theory of the Firm. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1963; pp. 78-81.

¹⁹ Herbert A. Simon, Administrative Behavior. New York: MacMillan Co., Inc., 1976; pp. 100-103.

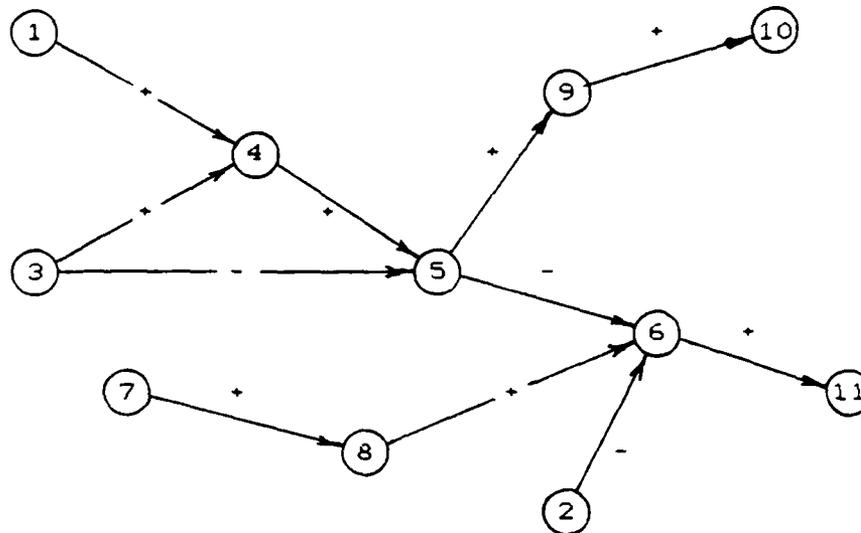
²⁰ March & Simon, op. cit.; pp. 142-150.

²¹ John D. Steinbruner, The Cybernetic Theory of Decision. Princeton: Princeton University Press, 1974; p. 54.

Formulation in the cognitive model is more intricately shaped by the decision-maker's belief system and the tools which structure it. Steinbruner identifies the latter as inferential memory, or the use of hierarchy of associations to assimilate new information; internal consistency of the set of beliefs; congruence of beliefs with environmental reality; and belief system economy, through simplicity and stability.²² If the cognitive mapping approach of Axelrod and Bonham and Shapiro can be considered an adequate operationalization of this model, then the cybernetic roots of the cognitive paradigm hypothesized by Steinbruner become much more apparent than his generalized argument would otherwise suggest. In this approach, the belief system is 'mapped' through the use of content analysis of the decision-maker's written and/or spoken record to obtain a set of causal relationships between concept variables representing policy alternatives, situations, and outcomes. While a general analogy is probably premature, it bears noting that the resulting 'map' displays striking similarities to the 'value model' which emerges in the corresponding phase of the analytic procedure. It is here, however, that the similarity ends, for causal relationships in the cognitive map are generally limited to 'positive' (+), 'negative'(-), or 'none' (0), although logical combinations of these characterizations are sometimes employed to reflect mixed attitudes. A very simple map, then, might resemble

²² Steinbruner, op.cit.; pp. 95-103.

the following:23



In the example shown, suppose that (1) and (2) are policy concepts (e.g., 'buy a new car'), (3) through (9) are situational concepts (e.g., 'repair costs'), and (10) and (11) are outcome concepts (e.g., 'mobility'). The cognitive mapping approach implies a sequential formulation process of inference, as asserted by Steinbruner, followed by deduction. The formulative process begins by identifying those concepts relating to the decisional situation; suppose in the example that (5) and (6) are so identified. The inferential process consists of tracing backwards through the map to infer those policy alternatives which might affect the situation through the established causal

23 George G. Nozica, G. Matthew Bonham, and Michael J. Shapiro, "Simulation Techniques", in Axelrod, ed., Structure of Decision. Princeton: Princeton University Press, 1976; p. 350.

relationships; in our case, (1) is so identified. Next, the deductive process traces forward through the map to determine associated outcomes; here, both (10) and (11). Thus the successive processes of inference and deduction yield all means-ends relationships relevant to the perceived situation. Of principal import, however, is the fact that the inferential process modeled in the cognitive mapping approach again presupposes an existing policy repertoire or set of 'scripts' from which to select an alternative; as in the cybernetic model, the decision-maker is presumed to "possess a set of policy alternatives that are tied to his cognitive mapping, ready to be evoked when a relevant situation arises,"²⁴ or, failing that, "alternative courses of action proposed by others must be supplied."²⁵ Steinbruner's hypothesized developmental link from the cybernetic to the cognitive paradigm now takes on some significance. Still missing, however, is any rigorous treatment of the question of induction, or the 'novel solution', which one would hope is not an altogether moot point. In the analytic model, it is addressed only obliquely, recalling Raiffa's admonition: "analysis serves as a stimulus for the decision-maker to think hard ... about new, viable alternative actions";²⁶ in the cybernetic and cognitive models, it is entirely absent.

²⁴ G. Matthew Bonham & Michael J. Shapiro, "Explaining the Unexpected", in Axelrod, op. cit.; p. 135.

²⁵ Ibid.

²⁶ Raiffa, op. cit.; p. 269.

Although ideally it should follow the same pattern as 'search', 'revision' seems most properly classified as the initial phase of the solution process; indeed, it may be the latter's prime determinant, as in the cybernetic model to be discussed, and in any case need certainly not follow the ideal construct. Revision in the analytic model may occur both in probability assessments and value/utility assignments, the latter in a straightforward manner reflecting a change in the environment, the former by applying Bayesian updating to the probability distributions of outcomes to incorporate new information. Notable, however, are cases in which the update procedure may remain bounded by the initial framework of formulation. The decisional model is first analyzed to determine the value of additional information; this may be accomplished either by considering available sources of information at their perceived level of reliability, or, more conveniently, calculating the value of 'perfect information', which, if not worthwhile, would certainly rule out any less predictive data.²⁷ If the information is deemed to be too 'expensive' in the context of the model, no updating is performed, and the initial formulation remains intact. But since the value of information is determined from this initial framework, a faulty formulation may produce a faulty value.

²⁷ Ronald A. Howard, "Decision Analysis: Perspectives on Inference, Decision, and Experimentation." Proceedings of the IEEE, vol 58, #5, 1970; pp. 546-550.

As a crude example of the first case, suppose a friend tells me he has a coin in his pocket, and, lacking any substantive information about the distribution of his coins, I assign equal probabilities to the outcomes 'penny' through 'silver dollar'; in actual point of fact, it may be a negligible rarity that the friend ever carries anything larger than a quarter. Before I guess, he offers to sell me information eliminating one coin. I perceive that this information will improve my chances of making a successful guess from $1/6$ to $1/5$, which may prove too small an increment to justify the expense involved; whereas, such information would in fact offer an increment from $1/4$ to $1/3$, which may be much more valuable. Assume, however, that the information is bought; in the second case, information may not reveal faulty formulation, and thus provide a faulty update. Returning to the coin example, suppose that I have only considered the alternatives 'penny' through 'half dollar', whereas it is in fact equally likely that my friend has a silver dollar. If he tells me it is not a quarter, my update on the probability of success is from $1/5$ to $1/4$, rather than $1/6$ to $1/5$. Under these circumstances, I might be willing to pay more for information than it is really worth, and still not arrive at an accurate formulation. In the last case, under the same scenario as the preceding, suppose my friend tells me his coin is not a silver dollar; now my update produces no change at all, except to signal my faulty formulation, and I am out the cost of the information. In each case, the theory operates within the constraints of 'bounded

rationality' by which the range of possible outcomes was initially formulated. I should point out that decision analysis postulates a 'clairvoyance test' which attempts to detect informational ambiguity of the sort illustrated, and further encourages reformulation of the problem where information produces ambiguous results; but these are more properly injunctions on the perceptiveness of the decision-maker than integral components of the analytic model, and one might readily imagine complex decisional situations in which the ambiguities are far more subtle than those of the simpleminded examples portrayed here. As a result, updating of probability assessments may not greatly improve the quality of the decision if the initial framework is faulty.

Sensitivity analysis provides the analytic vehicle by which changes in values may be applied to the solution process. In general decision theory, this analysis involves determining a range of values for each dependent variable through which an initial solution remains valid, and the resulting change of strategy outside that range. More exact deterministic techniques such as linear programming include measures for rapid update of outcome variable values based on input changes; the decision analysis updating procedure, however, is applicable to both output values and probability assessments, and thus provides additional flexibility for revision under typical conditions of uncertainty.

Both Bayesian updating and sensitivity analysis provide clear examples of Steinbruner's concept of 'lateral expansion', or the continuous incorporation of new information and environmental factors into the problem, while 'upward expansion', or reformulation of the problem at increasing levels of generality, remains something of an ideal construct.²⁸ In his cybernetic model, neither of these occur, and revision serves more naturally as the last key step in the decision process. Feedback is focused on the central variables identified in the formulation stage, and registered dichotomously as either acceptable or unacceptable, in the manner of a homeostatic device.²⁹ The manner of application of solutions varies with differing anticipants of the model: Cyert and March describe a 'problemistic search'³⁰, by means of which various 'recipes' or 'scripts' are applied successively until acceptable feedback results, while Lindblom uses the notion of 'incrementalism'³¹ to posit slight successive changes in a specific 'SOP' to produce the desired feedback. These approaches may relate situationally to the problem of original formulation of alternatives discussed earlier; the case of a limited repertoire or single randomly obtained 'program' might readily be conceived as conducive to

28 Steinbruner, op. cit., pp. 42-43.

29 Ibid., pp. 74, 78.

30 Cyert & March, op. cit., p. 80.

31 Charles E. Lindblom, "The Science of 'Muddling Through'." Public Administration Review, vol 19, 1959; pp. 79-88.

incrementalism, while the large, well-developed repertoire of a stable organization makes the 'problemistic search' a more viable alternative. We may also wish to consider at what point an incremental change may be construed to constitute a distinct 'recipe', since at that point the two approaches converge in their implications for the actual process. In either case, the resulting 'instrumental learning' process by which items in the repertoire are retained or eliminated over time is evident; successful 'SOP' persist as potential solutions in decision-making situations, while other less successful 'recipes' eventually drop out of the system.³²

Feedback in the cognitive model is deductive in that new information must be assimilated into the existing structure of beliefs. Illustrative of the potential distortion inherent in this process, Tversky and Kahneman have suggested an 'availability heuristic' which causes overestimation of the diagnosticity of new data when consistent with some readily available recent and/or important historical analogy in memory;³³ conversely, Edwards has noted a 'conservative bias', whereby if inconsistent data are received gradually, the coping mechanisms introduced earlier may be effective in permitting only marginal

³² Steinbruner, op. cit., pp. 78-79.

³³ Amos Tversky & Daniel Kahneman, "Availability: A Heuristic for Judging Frequency and Probability." Cognitive Psychology, vol 5, 1973; pp. 207-234.

adjustments.³⁴ The latter case seems to approach the 'incrementalism' of the cybernetic model, while the former implies much sharper fluctuation. Jervis provides an excellent account of these phenomena in an international relations framework, noting also what he has termed an 'inertia effect', asserting that new data have a decreasing impact as the decision process gains momentum and a firmer perception of the situation develops.³⁵ Cognitive revision is demonstrated in every case as highly dependent on the belief structure, data content, situation, update rate, and even time of arrival, so that optimal diagnosticity is unlikely to be attained.

Feedback is conspicuous by its absence in the cognitive mapping approach, a problem pondered at length by Axelrod but without conclusive explanation.³⁶ A tentative, tempting conclusion is that the problem has simply been defined away. Recall that the 'map' consists of causal paths between concepts of policy, situation, and outcome; feedback in this context would be reflected as a 'loop' or 'cycle' - a closed circular path among concepts. A loop among situational concepts might be taken to impute independent causality to these events outside the range

³⁴ L. Phillips & W. Edwards, "Conservatism in a Simple Probability Inference Task", in Edwards & Tversky, eds., Decision Making. New York: Penguin Books, Inc., 1967; pp. 239-254.

³⁵ Robert Jervis, Perception and Misperception in International Politics. Princeton: Princeton University Press, 1976; p. 187.

³⁶ Robert Axelrod, "Results", in Axelrod, op. cit., pp. 232-239.

of alternatives available to the decision-maker, and thus obviate the need to include them in his 'map'; a cycle closed by a path from outcome back to policy, on the other hand, would imply a priori knowledge of the policy outcome, and thus obviate the need for the 'map' entirely. Given that the map is principally a formulation tool, however, and that feedback and revision belong properly to the solution process, the latter type of cycle need not be expected in the basic construction of the map, but is certainly implicit in its final result: once the map is constructed and complete causal paths from policies to outcomes are determined, we might readily infer loops leading back from outcomes to policies. Indeed, it seems inconceivable that the decision-maker executing a policy would be insensitive to its final outcome; this sort of feedback occurs even within the limited scope of the cybernetic model. We must bear in mind that the 'map' is a static 'snapshot' of the belief structure at a pre-decisional point in time; it is thus unable to capture the dynamics of the process portrayed by Jervis and others.

At this point, many of the evaluative aspects of the various models have already been addressed, but it might be useful to recapitulate and expand on the principal concepts in this specific context. Characteristic of the analytic model is its comprehensive evaluation of all formulated options; but note the strict dependence of these calculations of expected utility upon the assumptions of value integration and quantification, as well

as consistent risk preferences, both of which depend in turn on the basic utility axioms:

(1) Orderability: transitivity of preferences.

(2) Continuity: values may be ordered by establishing a point of indifference between a given value and a lottery on some greater and lesser values. This ordering is unique up a linear transformation, and thus serves as the basis for the assessment of utility.

(3) Substitutability: the 'given' intermediate value determined above, known as a 'certain equivalent', is interchangeable with the lottery from which it was derived.

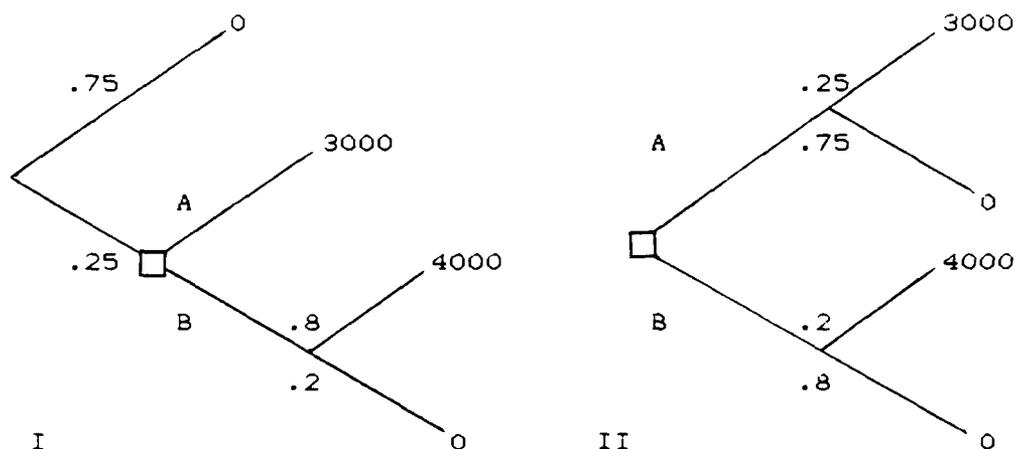
(4) Monotonicity: a lottery between given greater and lesser values with given probabilities is preferred over any other lottery on the same values where the probability of obtaining the greater value is decreased.

(5) Decomposability: a compound lottery (one constructed in several successive stages) is indistinguishable in preference from the equivalent simple lottery.³⁷

Some of the observed attitudinal violations of these axioms have already been discussed; in the process of evaluation,

³⁷ Ronald A. Howard, "Risk Preference", in Howard, et al, op. cit.; pp. 438-440.

however, recurrent procedural violations have been reported as well. Tversky discusses frequent cases of intransitivity, particularly in instances of small value differences, and most notably if the Luce model of stochastic preferences introduced earlier applies, in which case intransitivity becomes almost predictable.³⁸ Kahneman and Tversky have also observed an 'isolation effect', in which some isolated feature of a compound lottery renders it more perceptually attractive than the equivalent simple lottery, thus violating decomposability. Their example is a simple one: you must choose alternative A or B before the lottery; which one would you choose in the following cases?



The two lotteries are exactly equivalent, with expected values of 750 for A and 800 for B. In lottery II, most subjects correctly chose B for the higher expected payoff. But in lottery

³⁸ Amos Tversky, "Intransitivity of Preferences." Psychological Review, vol 76, #1, 1969; pp. 31-48.

I, the isolation effect produced a perceived certainty of gaining 3000 in the second stage under A, and so in consonance with the 'certainty effect' mentioned earlier and general principles of risk aversion, now the great majority chose A.³⁹ These findings, however, largely indicate analytic shortcomings in descriptivity as opposed to prescriptivity, which will be treated in more detail later.

The lack of direct outcome calculation in the cybernetic model has already been noted; the decision-maker may randomly select 'scripts' or 'recipes' applicable to the situation, as in Steinbruner's conceptualization, or operate with incremental variants of a single 'SOP', as in Lindblom's. In either case, evaluation rests entirely on the feedback process described above: acceptable or unacceptable outcome values determine decisional behavior, and choices are eliminated over time based on the latter.

The elimination process is more pronounced in the cognitive model, since it operates categorically in a given case rather than incrementally over time. Among the cognitive tools already described, 'consistency' demands value separation rather than integration, and 'simplicity' imposes firm categorical beliefs in the face of uncertainty, thus imparting clear and coherent rather

³⁹ Kahneman & Tversky, op. cit.; pp. 15-19.

than probabilistic meaning to events. Steinbruner observes several inconsistency-management mechanisms operating to maintain stability: images and arguments from analogy; 'inferences of transformation', or wishful thinking; and inferences of impossibility.⁴⁰ Each of these mechanisms may operate to eliminate choices in the evaluative process, and negative images of remaining 'undesired' alternatives may reduce the field further. The logical extreme of this process, labeled 'single-outcome calculation', concludes the evaluation phase with but a single 'acceptable' choice remaining. In the cognitive mapping operationalization of these constructs, the concept of 'centrality' of beliefs plays the principal role in supporting the notion of value separation. Centrality is defined simply by the number of causal paths passing through the concept variable, and when value conflict is detected between paths to a given outcome, the path involving the 'less central' concepts is simply "suppressed",⁴¹ which is to say eliminated, much in the manner of the inconsistency-management mechanisms cited above. Evaluation thus proceeds at the 'minimum cognitive cost'. The mapping approach also reflects the notions of 'positive' and 'negative' images in evaluating outcomes, by the use of matrix algebra to determine the overall multiplicative effects of each complete derived path from policy to outcome. This is, however, the limit

⁴⁰ Steinbruner, op. cit.; pp. 114-121.

⁴¹ Nozica, Bonham & Shapiro, op. cit.; p. 355.

of causal description; no provisions exist for weighting or functionalizing interrelationships, so the net effect of a policy choice on a given outcome variable is either positive, negative, or zero. Relative impacts of alternatives cannot be addressed: by this type of calculation we might suppose, for example, that a protestatory diplomatic note would have the same retardant effect on an international crisis situation as sending in the Marines.

The 'decision rule', while certainly the most straightforward phase for discussion, is equally the most critical, since it is here that the actual decision is made. The assumption of value integration is again central to the operation of the analytic model, since it enables the decision-maker to select an optimal strategy, one that provides for simultaneous maximization of affected values. In the cybernetic model, feedback remains the key determinant, since the first 'recipe' which produces acceptable feedback constitutes the decision, hence Simon's 'satisficing' rule.⁴² The cognitive model is more problematic in that Steinbruner confines himself to a discussion of 'tendencies' rather than a single rule⁴³, but two principal possibilities are implicit. In the logical extreme discussed above, choice is actually determined in the evaluation process: we might term this 'decision by elimination'. The other case uses Steinbruner's

⁴² Simon, op. cit.; p. 25.

⁴³ Steinbruner, op. cit.; pp.122-124.

'single-value criterion' to discriminate among acceptable alternatives, thus focusing in the end on reduction of values rather than outcomes. This is in effect the procedure employed in the cognitive mapping approach through the use of a 'lexicographic' decision rule. Values are ordered by relative importance, and scanned successively across all derived strategies, with the decision based on the first value dimension which successfully discriminates among alternatives.⁴⁴ This phenomenon, known as 'tunnel vision' in the trades, thus ignores all values beyond the point of discrimination, to include cumulative effects. The potential implications of this rule might best be realized by returning once more to the notion of buying a car. If I decide that a high-performance engine is the most important aspect of this decision, then my best purchase may be a machine powered by a 427-cubic-inch fuel-injected engine, with no doors and four flat tires. The case may seem absurd, but is illustrative of the behavioral extremes permitted by the model. I hasten to add, however, that there seems to be no good reason why an optimizing criterion could not be substituted for the lexicographic one, with the sole assumption that if values can be ordered, then they can be weighted, so that all may be considered simultaneously, rather than in the isolation premised by the single-value choice criterion.

⁴⁴ Michael Shapiro & G. Matthew Bonham, "Cognitive Processes and Foreign Policy Decision Making." International Studies Quarterly, vol 13, 1973; pp. 76-77.

Such a confluence of decisional models has already been suggested, but not formalized, in the general development of the analytic model. Analytic models of choice are not closed systems, but incorporate cognitive assumptions; not only are estimates of value and probability subjective, but attitudes toward different combinations of probability and value have cognitive sources. Thus in addition to the 'pure types', we might well imagine a decision formulated cognitively and solved analytically, formulated cybernetically and solved cognitively, and so on; we might even hybridize at some combination of sublevels, as in the preceding proposition of an otherwise cognitive model culminating in an analytic decision rule. Stein and Tanter, for example, have identified seven empirically likely variants involving discrete applications of the three models through the sub-stages of search, revision, evaluation and choice, among 3⁴, or 81, theoretically possible combinations.⁴⁵

It is likewise worth noting again that the model may not in itself provide a unique characterization of behavior and choice. The several disparate techniques which can collectively be described as 'analytic' have already been discussed, but without absolute assurance that each is uniquely applicable to a given situation. Similarly, Janis and Mann have proposed five variants

⁴⁵ Janice G. Stein & Raymond Tanter, Rational Decision-Making: Israel's Security Choices, 1967. Columbus, OH: Ohio State University Press, 1980; pp. 63-87.

of the cognitive model reflecting distinctive patterns of coping behavior.⁴⁶ It remains to be determined whether applicable inputs to the generalized models will yield the appropriate specific variations in the decision-making process suggested by these alternatives.

Efforts at synthesis along these lines seem to offer great promise for further research; but the key question, so often overlooked in existing critical treatments, but which must precede any meaningful development, is: what is the purpose of the model? Until we can agree that what was, is, will be, and should be are convergent, a single model simply will not do to describe, explain, predict, and prescribe. The utility of each of those described is well established; it remains to develop clues to the applicability of each to specific cases. This chapter has sought to evoke key features of the models which would characterize decision-making behavior of an analytic, cognitive, or cybernetic type, in order to facilitate the task of associating model and actor in a systematic fashion. This task is undertaken in the chapters which follow.

⁴⁶ Irving L. Janis & Leon Mann, Decision Making: A Psychological Analysis of Conflict, Choice, and Commitment. New York: MacMillan Co., Inc., 1977; pp. 45-80.

CHAPTER 2

THE OPERATIONAL CODE PROFILE

The entire 'rationalist' school in political science has subscribed to the analytic model as descriptive of the 'rational actor' who serves as the central figure in system-level international politics; the bulk of existing deterrence theory, for example, is formulated on this premise. Paradoxically enough, the most vociferous criticism of this application of the model would come probably not from the cognitive psychologists who have observed so many behavioral deviations, but from the quantitative decision theorists themselves, who never expected otherwise: analytic models "do not present a descriptive theory of actual behavior, nor a positive theory of behavior for some superintelligent being, but rather an approach designed to help us erring folk to reason and act a bit more systematically - when we choose to do so!"⁴⁷ The analytic model provides a normative technique for the optimal use of the information available to the decision-maker. To the extent that its premises must account for such nominally descriptive functions as the definition of the situation, assessment of value preferences and probability estimates, it relies heavily on cognitive assumptions, indeed resembling the cognitive model in some formulative respects, as has already been observed. Both models account for the various

⁴⁷ Raiffa, *op. cit.*; p. 125.

'cognitive limits on rationality' discussed by the psychologists, but the principal difference lies in their respective underlying thrusts: the cognitive model attempts to reproduce them faithfully for the purpose of description, while the analytic model strives to overcome them by the application of prescriptive techniques. The cognitive and cybernetic paradigms, in contrast to the analytic model, have both been developed for the principal purposes of description and prediction; if some of their implications offer potentially disastrous results, there are certainly enough disasters on record to argue against discrediting their use for the stated purpose on that basis.

It is generally agreed, even among the proponents of the other paradigms presented, that the analytic model presents the superior normative technique for rational decision-making; it remains, however, to determine an optimal process for description and prediction. All three models, as well as some of the 'hybrids' suggested above, it might readily be argued, have some descriptive power; even in the case of the analytic paradigm, a great deal of formal instruction will have been wasted if the model is nowhere in use. Accordingly, a principal task would appear to be to determine what model or variant provides the best 'fit' for a given decision-maker in a given situation. This question calls for a generalized 'mental portrait' of the decision-maker in a situational context, one which would encompass in a parsimonious fashion both the most central,

general beliefs which serve as an overall guide to behavior patterns, and those more specific beliefs which might shape action in a given situation. George's 'operational code' construct, capturing the 'philosophical' and 'instrumental' beliefs of the policy-maker in a political context, seems ideally suited to this purpose. Derived, as in the cognitive model, through quantitative or qualitative content analysis, the 'code' reflects the desired sets of general and specific principles:⁴⁸

THE OPERATIONAL CODE

I. Philosophical Beliefs

1. What is the 'essential nature' of political life? Is the political universe essentially one of harmony or conflict? What is the fundamental character of one's political opponents?
2. What are the prospects for eventual realization of one's fundamental political values and aspirations? Can one be optimistic, or must one be pessimistic on this score; and in what respects the one and/or the other?
3. Is the political future predictable? In what sense and to what extent?
4. How much 'control' or 'mastery' can one have over historical development? What is one's role in 'moving' and 'shaping' history in the desired direction?
5. What is the role of 'chance' in human affairs and in historical development?

II. Instrumental Beliefs

1. What is the best approach for selecting goals or objectives for political action?

⁴⁸ Alexander L. George, "The Operational Code: A Neglected Approach to the Study of Political Leaders and Decision-Making." International Studies Quarterly, vol 13, 1969; pp. 190-222.

2. How are the goals of action pursued most effectively?
3. How are the risks of political action calculated, controlled, and accepted?
4. What is the best 'timing' of action to advance one's interests?
5. What is the utility and role of different means of advancing one's interests?

The operational code has been used primarily as an alternative paradigm which, by virtue of its conciseness and generality, necessarily suggests general decisional propensities rather than specific choices. The content of the belief set depicted, however, evokes some highly suggestive hypotheses for the application of more specific models to the successive stages of the decision-making process. The systematization of such a set of hypotheses, coupled with an improved understanding of the basic nature and dynamics of the operational code, offer considerable promise as steps toward the construction of a typology which would link a given decision-maker with the most appropriate decisional model, and thus provide the necessary linkage between observation and application of theory in explaining and/or predicting policy decisions.

In exploring the operational code belief set to discover propensities for patterns of decisional behavior, then, we wish to determine the feasibility of a parsimonious operational-code-based typology by which a given political actor might be

classified with reasonable confidence and his approach to decisional problems thus modeled in the most accurate fashion. The present task is limited to the three 'pure' type classifications: analytic, cognitive, and cybernetic. Systematic assessment and comparison can be greatly facilitated if operational code beliefs can be characterized with reasonable accuracy along the dimensions which appear to be most salient to the parameters of decision-making behavior, and in a fashion which permits inferences distinguishing properties of the respective models in each dimension.

Holsti's proposal of a 'coding system' to support the conduct of operational code studies provides a point of departure for the desired characterization. His portrayal of the contents of the operational code comprises a series of specific questions subsumed under each of the belief categories previously introduced; this listing is reproduced on the pages following.⁴⁹ The resulting system is accurately described as amenable to analysis by either quantitative or qualitative means; but little of an intuitive leap is risked, and neither option forsaken, by suggesting a more explicit characterization which seeks to answer these questions by fixing, at least roughly, ranges of values on continua defined by the poles of each salient belief.

⁴⁹ Ole R. Holsti, "The Operational Code as an Approach to the Analysis of Belief Systems." Final Report to the National Science Foundation, Grant #SOC 75-15368, 1977; pp. 47-49.

CODING GUIDELINES FOR OPERATIONAL CODE STUDIES

Philosophical Beliefs

1a. What is the 'essential' nature of political life?

- Is the political universe basically conflictual or harmonious?
- What are the sources of conflict?
- What are the conditions of peace?
- What is the nature of conflict?
- What is the scope of conflict?
- What is the role of conflict?

1b. What is the fundamental character of one's political opponents and of other significant political actors?

- What is the nature of the opponent's goals?
- What are the sources of the opponent's goals?
- Is the opposition permanent and general or limited and specific?
- How is the opponent likely to respond to our conciliatory actions?
- How is the opponent likely to respond to our policies of firmness?
- What is the opponent's image of one's own nation?
- What is the opponent's view of conflict?
- What is the nature of the opponent's decision-making process?
- What is the opponent's 'operational code'?

1c. What is the nature of the contemporary international system?

- Is the international system basically conflictual or harmonious?
- What are the sources of conflict?
- What are the sources of peace?
- What is the structure of the contemporary international system?
- How stable is the contemporary international system?

2. What are the prospects for eventual realization of one's fundamental political values and aspirations? Can one be optimistic, or must one be pessimistic on this score? And in what respects the one and/or the other?

- What is the nature of one's fundamental goals?
- Should one be optimistic or pessimistic? About long-term goals? About specific undertakings?
- Is the optimism or pessimism conditional?
- On whose side is time?

3/5. Is the political future predictable? In what sense and to what extent? What is the role of chance in human affairs and in historical development?

- Is political life capricious, or does it follow a discernible pattern?
- What aspects of political life are predictable or unpredictable?
- What degree of predictability exists in political life?

4. How much 'control' or 'mastery' can one have over historical development? What is one's role in 'moving' and 'shaping' history in the desired direction?

- What is the role of the leader?

Instrumental Beliefs

1. What is the best approach for selecting goals or objectives for political action?

- How should one establish the goals for political action?
- Should one seek optimal goals or is it better to seek satisfactory ones?
- How many paths are there to the achievement of ultimate goals?
- How should one deal with value conflicts?

2. How are goals of political action pursued most effectively?

- Under what circumstances is it permissible to modify, substitute for, or abandon a goal?
- What approaches should be used in the pursuit of goals?
- Under what circumstances should one push harder, be prepared to compromise, or retreat from a previously held position?
- Under what circumstances is unilateral action preferred? Multilateral action?

3. How are the risks of political action calculated, controlled, and accepted?

- How are risks assessed?
- What approach should be used to limit or control risk?
- How should one deal with various types of tradeoffs associated with risk?
- Under what circumstances are high risk (or low risk) policies mandatory? Permissible? Prohibited?

4. What is the best 'timing' of action to advance one's interests?

- How important is timing in the achievement of major, long-term aspirations?
- How important is timing in the success of specific policy undertakings?
- When is action required, permitted, or prohibited?

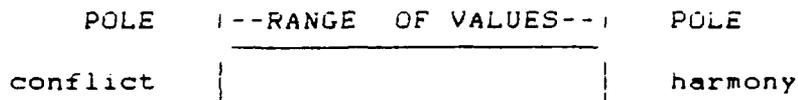
5. What is the utility and role of different means for advancing one's interests? What resources can one draw upon in the effort to advance one's interests?

- What are the preferred tactics?
- How is power conceptualized?

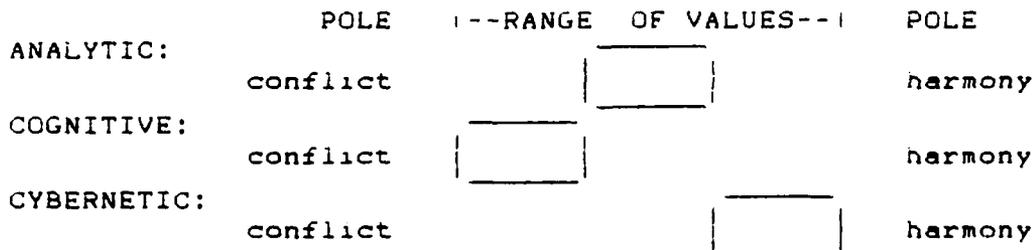
The discussion which follows, then, directs itself to an effort to fix the critical elements of each belief as ranges of values on a series of belief continua bounded by logical extremes. Holsti's coding guidelines largely inform the selection of dimensions for analysis, although some liberties have been taken. Questions addressing the nature of political life and that of the international system, for example, are combined as indistinguishable in the context of national security policy; the view of the opponent, likewise, is reduced to a single dimension, relying upon the model's definition of the situation to supply additional details after identifying the opponent in a given case. Each dimension is then considered for its potential marginal contribution to decisional behavior, by inferring correlations between specific values and applicable characteristics of the respective models. Inferences need be drawn no more specifically than from values ranging toward either pole or in the middle range, since only three model variants are to be characterized. Finally, the aggregate is examined with a view toward reduction and determination of overall propensities.

The philosophical beliefs reflect at the most general level the political actor's perceptions of the environment and his interaction with it, and the first philosophical belief serves as his working definition of this environment and the major forces which shape it. As such, questions determining this belief might be answered by fixing suitable values on the following continua:

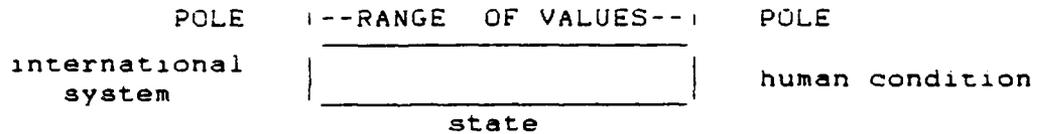
a. The political universe is essentially one of:



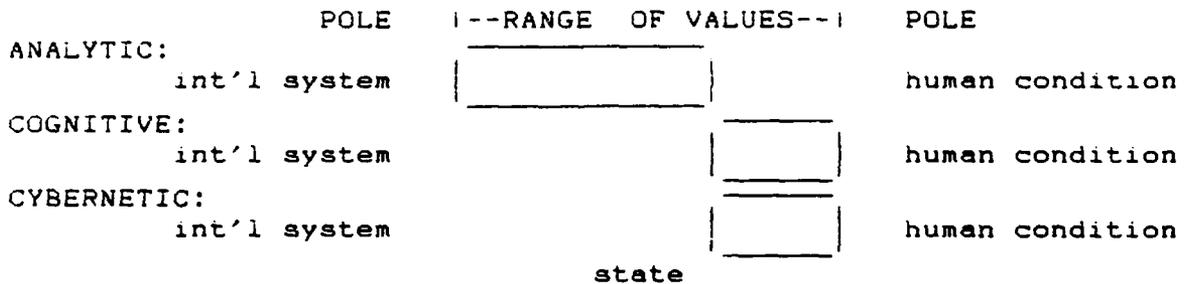
At the margin, it seems a reasonable assertion that one who believes the universe is basically harmonious would tend to use a cybernetic decision model, following established procedures and making only incremental changes to maintain that harmony. One who believes the universe to be irrevocably conflictual, however, is more likely to fit the cognitive model, with its sharp categorical inferences and analogizing. A belief that the universe is not inherently predeterminate, on the other hand, favors the use of an analytic decision process, whereby all relevant factors affecting the 'state of the universe' are considered, values integrated, and optimum effect achieved. Based on this reasoning, belief values on the continuum defining the decision-maker's view of the political universe can be associated with salient characteristics of the three respective models to divide the range of the continuum into three discrete segments, one associable with each model, yielding the results depicted graphically below.



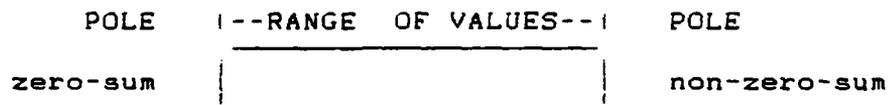
b. The principal sources of conflict are to be found in the nature of the:



Possibly one who places the basic source of conflict in the nature of man might tend to address such conflict via a cognitive or feedback-driven cybernetic process, whereas the view of conflict as inherent in the state or international system might seek structural solutions through an analytic scheme. These inferences are reflected in the value ranges for the respective models shown below; on balance, however, this belief seems even at the margin more relevant to defining classes of preferred solutions than the means by which a choice obtains.

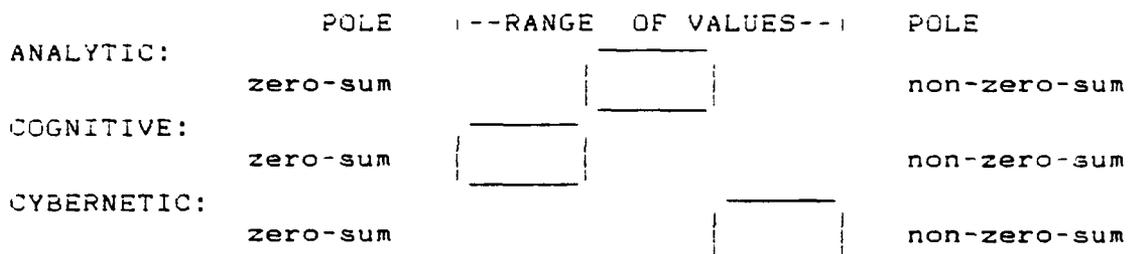


c. The basic nature of conflict is:

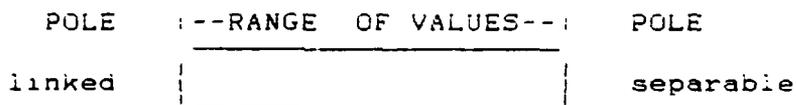


The nature of conflict may not provide a strong direct clue for the decision process either, although it might be contended that a characterization of conflict as zero-sum is a categorical

inference associable with the cognitive model, while the non-zero-sum case might support the 'satisficing' strategy of the cybernetic approach; one who believes that neither is inherently true might be more inclined to formulate analytically. These observations, while again not expected to be conclusive, have the following graphic representation:



d. The various issues of conflict are generally:



The hierarchical structure of the belief system suggests a strongly perceived linkage between component issues; hence such a belief coincides with the tenets of the cognitive model. Conversely, the complete separation of issues is a key characteristic of the cybernetic model. A more moderate appraisal, finally, in which issues are linked as dictated by their underlying environmental relationships, reflects formulation of an analytic type. This continuum, then, which appears directly relevant to a determination of decision-making behavior, divides into three discrete segments representing tendencies of the respective types, as indicated below.

	POLE	---RANGE OF VALUES---	POLE
ANALYTIC:	linked	<input type="checkbox"/>	separable
COGNITIVE:	linked	<input type="checkbox"/>	separable
CYBERNETIC:	linked	<input type="checkbox"/>	separable

e. The role of conflict is :

	POLE	---RANGE OF VALUES---	POLE
	functional	<input type="checkbox"/>	dysfunctional

The belief that conflict is functional may reflect successful efforts at reduction of cognitive dissonance through conflict resolution, and thus indicate a cognitive process, while the dysfunctional view would in the extreme tend to impel a 'recipe' approach to restore equilibrium, thus a cybernetic mode; one who reserves judgement in favor of situational variables conforms to the analytic process of comprehensive calculation in defining the situation, and thus reflects an important aspect of that model. These characterizations again yield a discrete segmentation of the belief continuum, producing a result similar to the preceding one both in appearance and probable predictive power for determining the appropriate model.

	POLE	---RANGE OF VALUES---	POLE
ANALYTIC:	functional	<input type="checkbox"/>	dysfunctional
COGNITIVE:	functional	<input type="checkbox"/>	dysfunctional
CYBERNETIC:	functional	<input type="checkbox"/>	dysfunctional

f. The actions and intentions of the opponent may be determined:

POLE	---RANGE OF VALUES---	POLE
rationality		ascriptively

The perceived character of the opponent seems unlikely to exercise a strong influence on the decisional model, except that the view of one's opponent as a rational actor might support the use of an analytic solution process for optimal countereffect, while ascription may reflect cognitive biases; a cybernetic actor would likely avoid prior characterization of opponents entirely.

	POLE	---RANGE OF VALUES---	POLE
ANALYTIC:	rational		ascriptive
COGNITIVE:	rational		ascriptive
CYBERNETIC:	rational		ascriptive

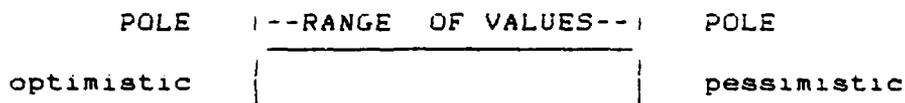
The preceding series of deductions offers tentative means by which the elements of the first philosophical belief yield distinct profiles characterizing each of the decision-making models under investigation. A complete recapitulation will be presented at the end of this chapter, following completion of review and associated inferences on the entire belief set; for interim purposes of illustration, however, a single case may provide a sufficient sense of direction. The analytic profile for the first philosophical belief, for example, has the following appearance to this point:

AN ILLUSTRATIVE ANALYTIC PROFILE - PHILOSOPHICAL BELIEF #1

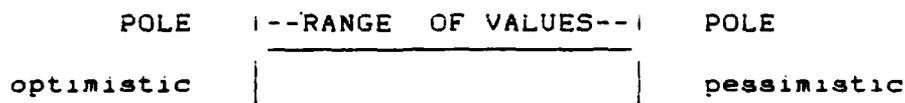
BELIEF	POLE	---RANGE OF VALUES---	POLE
Pia political universe	conflict	<div style="border: 1px solid black; width: 100px; height: 100px; margin: auto;"></div>	harmony
b source of conflict	int'l system		man
c nature of conflict	zero-sum		non-zero
d issues of conflict	linked		separable
e role of conflict	functional		dysfunct'i
f opponent actions	rational		ascriptive

The second philosophical belief further defines the environment as it relates to the particular values and aspirations of the political actor. In fixing the salient elements of this belief for further analysis and inference, attention focuses on the dimensions of optimism versus pessimism, in both long- and short-term perspectives, and the variance of these attitudes with the influence of time.

a. With respect to short-term prospects for realization of goals, one should be:



b. With respect to long-term aspirations for realization of one's most basic goals and objectives, one should be:



A priori optimism and pessimism are both uncharacteristic of the analytic model; accordingly, analytic processes might inhere more readily in one who conditions his optimism on the situation and other relevant factors, whereas predisposed optimism or pessimism may be characteristic of the analogizing or conditioned responses of a cognitive or cybernetic decision-maker. The same rationale should apply in both the long- and short-term cases, producing the graphical results shown below.

	POLE	---RANGE OF VALUES---		POLE
ANALYTIC:	optimistic			pessimistic
COGNITIVE:	optimistic			pessimistic
CYBERNETIC:	optimistic			pessimistic

c. Time is on the side of:

POLE	---RANGE OF VALUES---	POLE
oneself		one's opponents

The implications of a predisposed attitude toward the role of time should be similar to those of optimism/pessimism: significant predispositions in either direction are marginal, if not strong, indications of cognitive or cybernetic behavior patterns, and seem likely to parallel attitudes of optimism or pessimism. The profile elements illustrated below thus display the same variation as shown in the preceding case, reflecting a homogeneous pattern of belief values associated with the respective models for the second philosophical belief.

	POLE	---RANGE OF VALUES---	POLE
ANALYTIC:	oneself	[]	one's opponents
COGNITIVE:	oneself	[]	one's opponents
CYBERNETIC:	oneself	[]	one's opponents

The third philosophical belief begins a measure of the political actor's perception of change in his environment. Specifically, we wish to measure the level of confidence with which the course of future events is anticipated. The actor can be expected to formulate decisions in a manner which anticipates their effects on the flow of historical events; the question thus begs an answer of the following form:

The course of the political future is essentially:

POLE	---RANGE OF VALUES---	POLE
deterministic	[]	capricious

An actor's belief in a completely determined political future reflects the sort of categorical inference most readily associated with the cognitive model, while a believer in total capriciousness of the future could probably operate effectively only by a non-goal-oriented cybernetic process. In between, one who believes that the political future, while not strictly determined, is subject to analysis of probabilities of alternative futures, might be considered an analytic formulator. These inferences are summarized in pictorial form below.

	POLE	|--RANGE OF VALUES--|	POLE
ANALYTIC:	deterministic	[]	capricious
COGNITIVE:	deterministic	[]	capricious
CYBERNETIC:	deterministic	[]	capricious

The fourth philosophical belief measures most explicitly the decision-maker's perceived interaction with his environment in terms of level of control, and should bear strongly on propensities for decisional behavior. This perception might, then, be effectively captured by determining a value on the continuum indicated:

One's control in 'moving' and 'shaping' history is:

POLE	|--RANGE OF VALUES--|	POLE
total	[]	none

One who believes himself in total control of historical development again reflects the categorical definition of the situation characteristic of the cognitive paradigm. Conversely, a perceived total lack of control seems compatible only with a cybernetic 'recipe' approach to decision-making. The middle ground, where control might be determined as a function of situational variables, is perhaps most appropriately the realm of the analytic decision-maker, and thus suggests formulation in accordance with that model. Discrete segmentation is the intuitively satisfying result shown below.

	POLE	---RANGE OF VALUES---	POLE
ANALYTIC:	total	<input type="checkbox"/>	none
COGNITIVE:	total	<input type="checkbox"/>	none
CYBERNETIC:	total	<input type="checkbox"/>	none

The 'role of chance' addressed in the fifth philosophical belief may be associated with the predictability of the political future, and it indeed seems likely that the former belief would be strictly determined by the latter; it is highly implausible, for example, that a deterministic predictor would assign a large role to chance, or vice versa. These two beliefs, then, if not absolutely reducible, might at least be considered deterministically interdependent for the present purpose, thus yielding the same graphical results as shown above.

The above suggests that less obvious linkages may exist within the philosophical belief set to further simplify the analysis. In particular, the fourth belief, the role of the leader, might be considered to exert a strong influence on the preceding beliefs regarding realization of aspirations and predictability of the future; one who believes himself fully the master of historical development thus seems almost certain to ascribe predictability to future outcomes and anticipate realization of goals optimistically. The overtones of a perceived lack of control are perhaps less strong; it seems at least marginally plausible that such a belief could accompany

one of predictability or even optimism if motivated, for example, by strong religious beliefs. Let us, however, consider this pole in conjunction with principal elements of the first philosophical belief: specifically, the essential nature of the political universe, and the role of conflict. One who believes, for example, in a basically harmonious universe but one in which conflict is both dysfunctional and unavoidable might be fairly described as an optimist, at least in the long run, who assigns a large role to chance in historical developments. On the other hand, one who assigns the same role to conflict but considers it the central feature of political life is almost certainly a pessimist who attributes great predictability to the future. Since the characterization of conflict as unavoidable seems to follow necessarily from a perceived lack of control, other permutations seem at best remotely likely; notably, however, the former case consistently describes features expected of a cybernetic decision-maker, while the latter splits evenly between cognitive and cybernetic characteristics, which seems reasonable in terms of the purported complementarity of the two models. As a tentative result, then, it seems likely that these salient elements of the first and fourth philosophical beliefs, which we will label P1a, d, and e, and P4, corresponding to the introduction of their descriptive continua above, will yield a reduced profile explaining most of the variance in the full set of philosophical beliefs for the present purpose. A single example is again offered for purposes of illustration pending compilation of

final results at the conclusion of this chapter. Reduction of the philosophical beliefs in the analytic case yields the following portrayal:

AN ILLUSTRATIVE ANALYTIC PROFILE - REDUCED PHILOSOPHICAL BELIEFS

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict	<div style="border: 1px solid black; width: 100px; height: 100px;"></div>	harmony
d issues of conflict	linked		separable
e role of conflict	functional		dysfunct'i
P4 control of history	total		none

The instrumental beliefs, as asserted earlier, are expected to operate directly to influence modes of action in a given situation. The first of these, determining how goals and objectives are selected for political action, suggests consideration along four dimensions:

- a. The basis for establishing goals lies in:

POLE	---RANGE OF VALUES---	POLE
self-interest	<div style="border: 1px solid black; width: 100px; height: 20px;"></div>	shared interests

One who establishes goals in terms of self-interest would probably tend to formulate decisional problems using a cognitive process by which conflicting values and other interests might be effectively screened out; an emphasis on shared interests, on the other hand, might tend to promote the development of generalized policies applicable across a wide range of situations, thus a

cybernetic approach. One whose goals are defined more objectively by relevant values is a more characteristically analytic actor. Employing the same technique of graphic summarization as that used for the philosophical beliefs yields the representation of the respective model elements shown below.

	POLE	---RANGE OF VALUES---	POLE
ANALYTIC:			
	self-interest		shared interests
COGNITIVE:			
	self-interest		shared interests
CYBERNETIC:			
	self-interest		shared interests

b. The manner of seeking goals should be:

	POLE	---RANGE OF VALUES---	POLE
	broad		limited

One whose goal orientation is reasonably broad seems likely to formulate in a manner which captures the widest range of relevant decision-making variables - that is, analytically. An extreme perspective in this direction, however, increases the imperative for assimilation of data in a selective cognitive manner, while the absence of any goal orientation again serves as a principal feature of the cybernetic model.

	POLE	---RANGE OF VALUES---	POLE
ANALYTIC:			
	broad		limited
COGNITIVE:			
	broad		limited
CYBERNETIC:			
	broad		limited

c. The paths available for achievement of goals are:

POLE	---RANGE OF VALUES---	POLE
few		many

A belief in multiple paths to achievement of goals seems most readily associable with a cybernetic or cognitive solution process by which a strategy is selected randomly or by analogy, whereas the quest for a single optimal path is more likely to originate analytically. None of the models, however, determine explicitly an a priori path distribution, so the predictive power of this belief is probably relatively weak.

	POLE	---RANGE OF VALUES---	POLE
ANALYTIC:	few		many
COGNITIVE:	few		many
CYBERNETIC:	few		many

d. Conflicts of values are best resolved through:

POLE	---RANGE OF VALUES---	POLE
integration		separation

Whether treated as an independent factor or not, the handling of value conflicts is certainly a central determinant of the process of formulation. Complete integration and resultant ordering of preferences strongly imply an analytic process, limited integration a cognitive one; total separation of values suggests instead a cybernetic approach.

	POLE	|--RANGE OF VALUES--|	POLE
ANALYTIC:	integration	[]	separation
COGNITIVE:	integration	[]	separation
CYBERNETIC:	integration	[]	separation

The second instrumental belief seeks to explain the decision-maker's view of the most effective means of pursuing his goals. This question can be addressed by the following determinations:

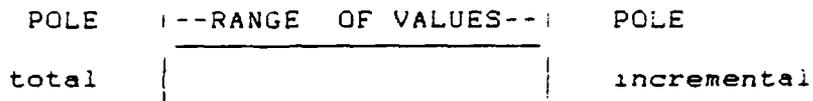
- a. The effective pursuit of goals requires:

	POLE	|--RANGE OF VALUES--|	POLE
	firmness	[]	flexibility

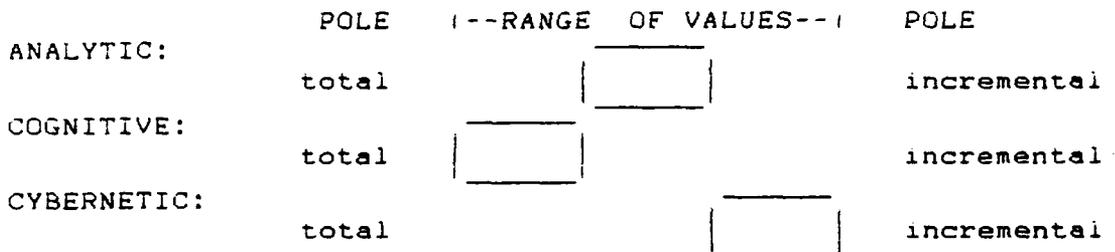
The greatest measure of flexibility is that afforded by the cybernetic model, where an incremental change in strategy occurs with each instance of unfavorable feedback, regardless of diagnosticity. Moderate flexibility is in turn associable with an analytic process in which new strategies result from optimal analysis of new information. In the cognitive model, however, even a great deal of dissonant information may not affect strategy, thus relative inflexibility suggests a cognitive process.

	POLE	|--RANGE OF VALUES--|	POLE
ANALYTIC:	firmness	[]	flexibility
COGNITIVE:	firmness	[]	flexibility
CYBERNETIC:	firmness	[]	flexibility

b. The most effective manner of pursuing strategies is:

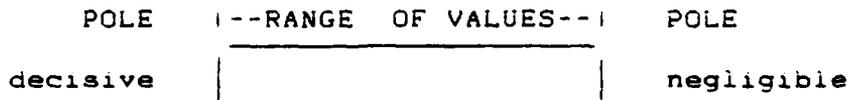


A believer in the general use of incremental strategies displays cybernetic solution characteristics, while pursuit of broader, less well-defined strategies may reflect cognitive dissonance reduction; one who believes instead that strategy is determined strictly by situational variables is more likely to choose a strategy analytically.

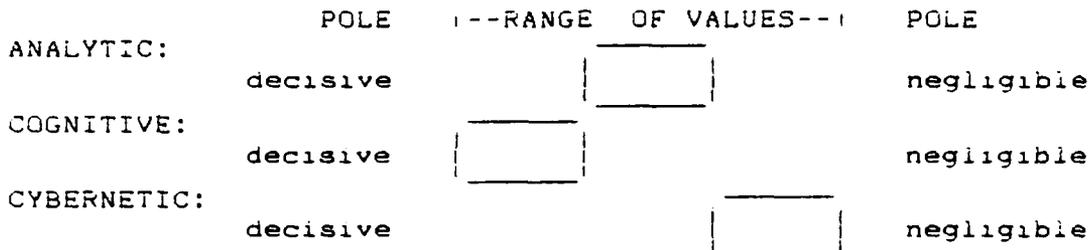


The political actor's assessment of the role and impact of risk is measured by the third instrumental belief, in an effort to determine how a situation of risk affects the actor's selection of strategies and goals. Two factors appear to offer a satisfactory summary of this belief:

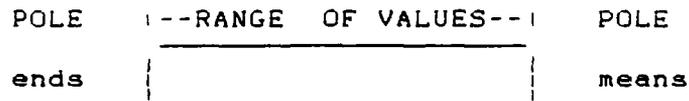
a. The assessment of risk as a factor in weighing outcome calculations is:



One who assesses risks in a utilitarian manner, weighing them against values in a consistent manner, is a strong candidate for the analytic model. A more categorical assessment of risks suggests instead the operation of cognitive mechanisms of clarity and simplicity. Since direct outcome calculation is obviated entirely in the cybernetic model, we might suspect the marginal absence of risk assessment to imply such a process. The centrality of risk assessment as a determinant of decisional behavior lends potential importance to the graphical representation shown.



b. Risks are controlled most effectively by limiting:



One who controls risk by limiting means seems likely to operate in the incremental fashion predicted by the cybernetic model, while the limitation of ends is more characteristic of the cognitive reduction mechanisms posited by that construct; one who does both in optimally relevant measure, however, constructing the necessary linkages by which means affect ends, displays important facets of analytic decision-making. The results in this important factor again reflect discrete segmentation.

	POLE	| --RANGE OF VALUES-- |	POLE
ANALYTIC:	ends	<input type="text"/>	means
COGNITIVE:	ends	<input type="text"/>	means
CYBERNETIC:	ends	<input type="text"/>	means

The relevance of timing in achieving interests is the subject of the fourth instrumental belief, and suggests immediately a continuum of importance, both as a short- and long-term factor:

a. Timing in the short time is:

	POLE	| --RANGE OF VALUES-- |	POLE
	important	<input type="text"/>	irrelevant

b. Timing in the long term is:

	POLE	| --RANGE OF VALUES-- |	POLE
	important	<input type="text"/>	irrelevant

The perception of timing seems to have predictive power only in that a belief in timing as a priori irrelevant is uncharacteristic of an analytic formulation process where all factors, timing included, would be weighed. It might be argued that such a view is most compatible with a cybernetic model where timing is unlikely to be an important factor; but this does not appear to be a principal characteristic of any of the models discussed, and thus the results depicted below will probably not provide definitive information.

	POLE	|---RANGE OF VALUES---|		POLE
ANALYTIC:	important			irrelevant
COGNITIVE:	important			irrelevant
CYBERNETIC:	important			irrelevant

The fifth and final instrumental belief seeks a measure of what specific means are perceived as most useful in advancing the decision-maker's interests. The actor's preference of tactics and conception of power seem the most useful determinants in this regard:

a. The most useful tactics in pursuing goals are those which are based on:

POLE	|---RANGE OF VALUES---|	POLE
force		negotiation

b. The dimensions of power are:

POLE	|---RANGE OF VALUES---|	POLE
one (military)		many

The utility of various means to goal attainment again seems a weak predictor. We might suppose that any strong predispositions along these lines hint at a cybernetic 'recipe' approach, while a prominent but less pronounced belief may reflect the analogizing of the cognitive model, and no disposition at all increases the propensity for analytic solution techniques. None of these.

however, seems strongly indicative of decision-making propensities.

	POLE	---RANGE OF VALUES---		POLE
ANALYTIC:	force			negotiation
	one (military)			many
COGNITIVE:	force			negotiation
	one (military)			many
CYBERNETIC:	force			negotiation
	one (military)			many

To recapitulate, the first three instrumental beliefs seem most relevant to the purpose of building decisional models. To determine whether this list is further reducible, it may be useful to review contents of the philosophical beliefs for possible interdependencies. In reviewing elements of instrumental belief #1, it seems reasonable, for example, that knowledge of a decision-maker's view of the political universe and perception of conflict might strongly influence his establishment of goals: thus one who sees a conflictual, zero-sum universe is likely to emphasize self-interest, while one who views the universe as basically harmonious and conflict as non-zero-sum will more probably establish goals based on shared interests. Similarly, the scope of goals sought is likely to vary directly with one's perceived level of control over historical development. The perceived paths to achievement of goals seem relatively indeterminate in terms of other beliefs, except that

perhaps a harmonious view of the universe and/or a functional view of conflict seems most compatible with the perception of multiple paths; further speculation seems unproductive, however, recalling that this component was not at any rate anticipated to be a powerful predictor of decisional behavior. The integration of values, on the other hand, has undeniable importance, but seems directly parallel to perceptions of the scope of conflict and resulting integrability of issues. In each of these cases, the influence of interdependence is reinforced by the consistency of predicted decision-making; accordingly, it seems reasonable to expect that most of the marginal variance in instrumental belief #1 will be explained for the present purpose by a suitable combination of the first and fourth philosophical beliefs.

The perceived character of an effective strategy depicted in instrumental belief #2 appears likewise intertwined with the decision-maker's perceived control over historical development; thus one who expects to exert little or no control must of necessity be flexible, while one with total control has no such need, and should thus be more inclined to firmness. The relationship of strategy selection with the latter seems similarly straightforward, in that the scope of the strategy an actor selects should vary directly with the amount of control perceived in subsequent shaping of the environment. Thus we may anticipate that most of the variance in the second instrumental belief will be explained by values of the fourth philosophical belief.

Linkages to the third instrumental belief seem to be considerably less powerful. It might be supposed, for example, that a high degree of perceived control implies categorical assessment of risk; but then such control may rest entirely upon an ability to assess risks in a utilitarian fashion. Components of the first philosophical belief seem equally unlikely to provide any definitive trend. A key distinction must be observed between this belief and the 'role of chance', which is expected to be dependent. One who believes the future is completely deterministic has no need to assess risk; one who believes the future to be totally capricious has no means. In the vast gulf between, however, the perceived role played by chance and the means of coping with the resulting risk may vary with considerable independence. One may, for example, assign a large role to chance and still avoid risky options, assess risks analytically, or ignore them altogether; one who believes the future extensively predictable retains similar options. It thus appears useful to retain the third instrumental belief as an independent variable for the present purpose.

Reviewing the argument thus far in terms of both interdependence of beliefs and predictive power of their various components, then, the following set seems essential for the selection of a decisional model: philosophical beliefs 1a, the essential nature of political life, 1d, the scope of conflict, and 1e, the role of the leader; philosophical belief 4, level of

control; and instrumental belief 3, coping with risk. To clarify, we might consider the belief set among the various dimensions discussed as a 'profile' defining the decision-maker's operational code, and, more specifically, his propensities for the decisional behavior predicted by the major models discussed. To reinforce this notion, it may prove useful to aggregate the profile elements developed in this chapter, both for the full and reduced belief sets, of the 'pure types' we have considered: thus we would expect the first figure following to portray an analytic decision-maker, the second a cognitive one, and the third a cybernetic type. On the figures, beliefs comprising the full and reduced belief sets are listed vertically: width determines the allowable range of values on the corresponding continuum. No more than a rough characterization of range has been attempted, consistent with the preceding discussion; in most cases, the result portrays values which tend toward one or the other extreme, or a middle range, which suffices to distinguish among the three alternative models. No argument has been offered for the uniqueness of these profiles in representing the respective decision-making processes, although the mutual exclusiveness and exhaustiveness of the reduced sets may offer some support for this assertion. More importantly, there remain some 726 possible profiles just from the reduced belief set deduced, even without more specific characterization of values; these may provide important insights for future consideration of composite decision models.

AN ANALYTIC PROFILE

BELIEF	POLE	|--RANGE OF VALUES--|	POLE
P1a political universe	conflict	|-----|	harmony
b source of conflict	int'l system		man
c nature of conflict	zero-sum		non-zero
d issues of conflict	linked		separable
e role of conflict	functional		dysfunct'l
f opponent actions	rational		ascriptive
P2a short-term prospects	optimist		pessimist
b long-term prospects	optimist		pessimist
c time bias	oneself		opponents
P3 course of future	deterministic		capricious
P4 control of history	total		none
P5 role of chance	total		none
I1a basis of interests	self		shared
b goal definition	broad		limited
c paths to goals	few		many
d value resolution	integration	separation	
I2a goal pursuit	firm	flexible	
b strategy	total	incremental	
I3a risk factor	decisive	negligible	
b control of risk	ends	means	
I4a short-term timing	important	irrelevant	
b long-term timing	important	irrelevant	
I5a tactics	force	negotiation	
b dimensions of power	one	many	

AN ANALYTIC PROFILE

REDUCED BELIEF SET

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict		harmony
d issues of conflict	linked		separable
e role of conflict	functional		dysfunct'l
P4 control of history	total		none
I3a risk factor	decisive		negligible
b control of risk	ends		means

A COGNITIVE PROFILE

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict	[]	harmony
b source of conflict	int'l system	[]	man
c nature of conflict	zero-sum	[]	non-zero
d issues of conflict	linked	[]	separable
e role of conflict	functional	[]	dysfunct'i
f opponent actions	rational	[]	ascriptive
P2a short-term prospects	optimist	[]	pessimist
b long-term prospects	optimist	[]	pessimist
c time bias	oneseif	[]	opponents
P3 course of future	deterministic	[]	capricious
P4 control of history	total	[]	none
P5 role of chance	total	[]	none
I1a basis of interests	seif	[]	shared
b goal definition	broad	[]	limited
c paths to goals	few	[]	many
d value resolution	integration	[]	separation
I2a goal pursuit	firm	[]	flexible
b strategy	total	[]	incremental
I3a risk factor	decisive	[]	negligible
b control of risk	ends	[]	means
I4a short-term timing	important	[]	irrelevant
b long-term timing	important	[]	irrelevant
I5a tactics	force	[]	negotiation
b dimensions of power	one	[]	many

A COGNITIVE PROFILE

REDUCED BELIEF SET

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict		harmony
d issues of conflict	linked		separable
e role of conflict	functional		dysfunct'l
P4 control of history	total		none
I3a risk factor	decisive		negligible
b control of risk	ends		means

A CYBERNETIC PROFILE

	BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a	political universe	conflict		harmony
	b source of conflict	int'l system		man
	c nature of conflict	zero-sum		non-zero
	d issues of conflict	linked		separable
	e role of conflict	functional		dysfunct'l
	f opponent actions	rational		ascriptive
P2a	short-term prospects	optimist		pessimist
	b long-term prospects	optimist		pessimist
	c time bias	oneself		opponents
P3	course of future	deterministic		capricious
P4	control of history	total		none
P5	role of chance	total		none
I1a	basis of interests	self		shared
	b goal definition	broad		limited
	c paths to goals	few		many
	d value resolution	integration		separation
I2a	goal pursuit	firm		flexible
	b strategy	total		incremental
I3a	risk factor	decisive		negligible
	b control of risk	ends		means
I4a	short-term timing	important		irrelevant
	b long-term timing	important		irrelevant
I5a	tactics	force		negotiation
	b dimensions of power	one		many

A CYBERNETIC PROFILE

REDUCED BELIEF SET

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict		harmony
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e role of conflict	functional		dysfunct'l
P4 control of history	total		none
I3a risk factor	decisive		negligible
b control of risk	ends		means

CHAPTER 3

POTENTIAL CASES

Despite the fragmentary nature of the preceding conclusions, a brief consideration of selected cases at this point may provide some preliminary indication of the potential utility of the analytical framework. A conscious effort has been made to select cases with a view toward controlling for all factors not intrinsic to the analysis; thus wide disparities in time, space, and role have been avoided at the present stage. Secretaries of State James F. Byrnes, Dean Acheson, and John Foster Dulles all served the United States government in the same capacity and in reasonably close succession, and are thus well suited to the objectives outlined above. Additional considerations favor these selections: they are among the few on whom comprehensive operational code studies are available or readily derived to serve as a basis for applying the typology developed in the preceding chapters, an important factor since the actual conduct of such a study would extend well beyond the scope of the present effort; and, perhaps most significantly, a review of these studies suggests that these three decision-makers may provide reasonable approximations to the 'pure types' addressed by the models under study: analytic, cognitive, and cybernetic. Byrnes, Acheson and Dulles thus provide suitable case studies for an effort to derive operational code profiles for specific actors, and compare them to the ideal constructs already proposed.

During his relatively brief tenure as Secretary of State from mid-1945 to early 1947, James Byrnes was the chief architect of the 'patience with firmness' policy for dealing with the Soviet Union that marked the early postwar era. The evolution of this policy, however, is clearly marked by recurrent shifts on the part of Byrnes between stances of conciliation and firmness, apparently as a function of domestic political pressures and negotiating stance.⁵⁰ The process suggests basic beliefs in harmony, non-zero-sum negotiation, conflict avoidance, and flexibility, significantly tempered by feedback in the domestic political arena, all strongly consistent with the tenets of the cybernetic decision model. This conclusion is reinforced by the findings of Messer's investigation, which is not an operational code study *per se* but a 'psycho-biography' of the George genre, from which salient elements of the belief set required to reconstruct Byrnes' operational code may be readily deduced.⁵¹

That Byrnes' operational code should reveal a cybernetic decision-maker is suggested early by Messer's description of his political philosophy as "fundamentally one of opportunism ...

⁵⁰ John Lewis Gaddis, The United States and the Origins of the Cold War, 1941-1947. New York: Columbia University Press, 1972; pp. 282-315.

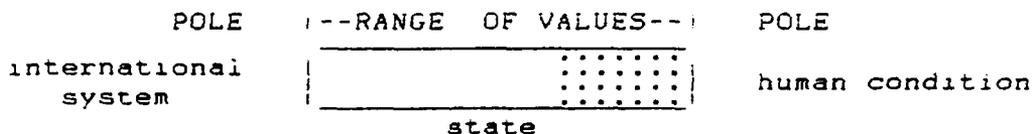
⁵¹ Robert Louis Messer, The Making of a Cold Warrior: James F. Byrnes and American-Soviet Relations, 1945-1946 (unpublished dissertation, University of California, 1975). Subsequent citations of this study used in deriving Byrnes' profile are listed by page number in brackets.

"Byrnes' support of Wilson's internationalism ... seems more the result of a considered commitment than of temporary expedience in a crisis ... He admired Wilson's dignified and altruistic peace proposals ... The combination of Wilsonian liberalism and pragmatic political opportunism that characterized Byrnes' career in the House was to manifest itself even more clearly later in his actions as Senator during the New Deal, as a wartime economic czar and as postwar Secretary of State." [41-42]

"Byrnes' presence [at Yalta] ... left him with an impression of an easy-going camaraderie among Roosevelt, Churchill and Stalin that was to color his account of the conference on his return ... To Byrnes much of the conference's superficial agreement and friendly cooperation ... must have seemed more real than it in fact was ... Such a belief would make Byrnes an ideal reporter and salesman of Yalta." [149-150]

"Byrnes' world view was shaped and delimited by the definitions, procedures and objectives of domestic legislative politics. That view of reality presumed a broad over-arching consensus of beliefs concerning the validity of principles such as self-determination and the definitions of terms like 'democratic'." [173]

Pib. The principal sources of conflict are to be found in the nature of the:



Byrnes' reliance on his experience and facility in the realm of domestic politics looms equally large in his emphasis on personal factors in the conduct of international relations:

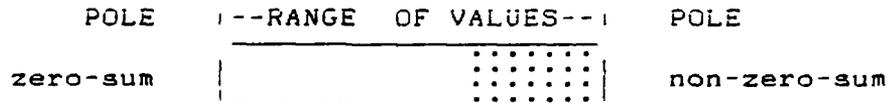
"In taking with him into the arena of world politics his domestically successful techniques of independence of action, pragmatic compromise and his parochial perception of reality, Byrnes introduced a personal factor that was to have a profound effect on American-Soviet relations." [49]

"He was confident that a personal appeal to Stalin was the best way to get results ... Byrnes attempted to get past the obstructionist Molotov by dictating a message sent to Stalin ... When this attempt to circumvent Molotov failed, Byrnes grew increasingly pessimistic about accomplishing anything unless he

could deal with Stalin personally ... Byrnes began to look on Molotov as an evil usurper of Stalin's power, whose ambitions threatened to plunge the world into another war ... While Molotov emerged as the villain of Soviet-American relations, Stalin remained, in Byrnes' opinion, the potential hero who could still save the situation." [347-348]

"Byrnes' concern for Stalin's perspective... reveals an important characteristic of Byrnes' approach to international politics - his reduction of complex policies and national interests to individual personalities and the personal relations between leaders. This personalization of international politics is manifest in ... his reliance on personal diplomacy as the foundation of his foreign policy." [374]

Pic. The basic nature of conflict is:

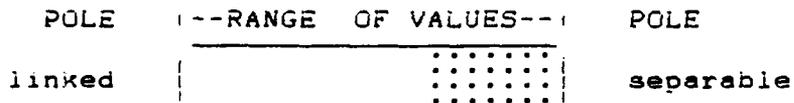


A strong Byrnes conviction in the availability of non-zero-sum outcomes in conflict situations is apparent in his thorough "reliance on compromise as a viable technique of conflict resolution" [49].

"Characterizing the conference at Yalta as a convincing demonstration of Allied unity and resolve, ... Byrnes stressed that 'the important thing to me was that we did have decisions and not merely declarations.'" [166]

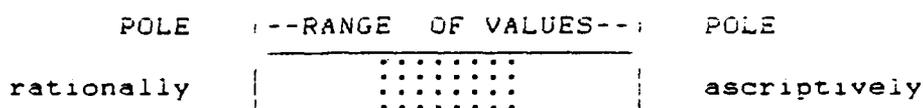
"Byrnes defended 'intelligent compromise' as justified and necessary for 'political progress', both in domestic and international affairs. In his defense of compromise as the foundation for progress, Byrnes revealed both the pragmatism of his political philosophy and his transfer of it from the domestic to the international sphere." [385]

Pid. The various issues of conflict are generally:



"In relating the original motive behind his Yalta note-taking, Byrnes implied [his] ... suspicions of British intentions. Byrnes made no mention of any similar concern about a Soviet record of the conference proceedings. This disregard may have been an oversight; or it may have been an indication that Byrnes ... foresaw no reason why the Soviets and Americans should disagree about the meaning of the Yalta accords." [233-234]

Pif. The actions and intentions of the opponent may be determined:



Byrnes' view of the opponent as motivated neither rationally nor ascriptively is portrayed in his tendency instead to analogize to reduce complexities to more familiar terms of reference.

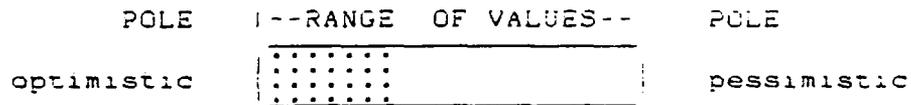
"In explaining the complexity of the Polish problem, Byrnes likened the exile government of the London Poles and the Warsaw government to the American Democratic and Republican National Committees. Although a vehicle for Byrnes' wry humor, Byrnes' choice of such an analogy reflects the same inability to transcend the limits of his origins and experience that appears in Byrnes' thinking on subject such as religion and race." [173-174]

"Byrnes, relying on a familiar analogy from domestic politics, pointed out that everyone at Yalta recognized from the beginning that the Soviet-backed Lublin government would retain effective control of the expanded regime. 'No political organization in this country, under similar circumstances, would permit the words of an agreement ... to mean that an entirely new organization would be set up and be determined independently of an agreement on the part of the principal power'." [236]

The components of Byrnes' second philosophical belief, regarding prospects for realization of fundamental goals, are shaped by his life-long practice of political opportunism, suggesting a short-term approach in which events could be exploited to his advantage in situations of immediately favorable prospect, even

against the foreseeable cost of ignoring or sacrificing longer-term considerations of graver import. The focus of Byrnes' efforts is illustrated by the examples which follow to be almost exclusively on potential gains in the near term.

P2a. With respect to short-term prospects for realization of goals, one should be:

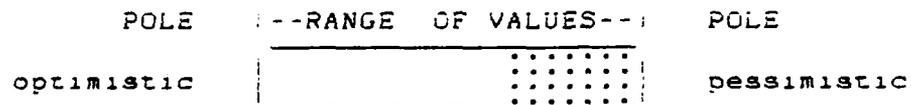


"Byrnes' opportunistic expansion of the [atomic] bomb's significance to serve his own needs as Secretary is consistent with his lifelong political opportunism, and his world view as a pragmatic domestic politician... His problems as a politician centered on deciding what actions to take, what goals - both desirable and possible - to seek while he still held power and could influence the immediate course of events." [284]

"Byrnes could hardly have avoided becoming infected with enthusiasm for the bomb. But Byrnes' reaction to the advent of the bomb exceeded the zeal of the bomb's most ardent advocates. The reason for this excessive reaction relates directly to Byrnes' peculiar position as Secretary of State." [307]

"[Ambassador Joseph] Davies' argument for seeing the bomb from the Soviet perspective apparently had no effect on Byrnes' unbounded optimism about the efficacy of the bomb as an instrument of international policy." [318]

P2b. With respect to long-term aspirations for realization of one's most basic goals and objectives, one should be:



"As a politician, Byrnes chose to ignore ... scientific analysis applied to a hypothetical future scenario in favor of less rational considerations of current politics - domestic and international... While he may have accepted ... that in the long

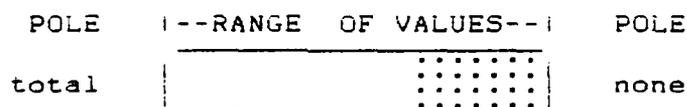
Byrnes the opportunist. His inclination to spurn detailed planning in favor of an intuitive approach to decision-making yields the inference that he viewed the future with little determinism.

"As both a domestic and international politician, Byrnes relied heavily on intuition, pragmatism and opportunism. Both critics and admirers who observed close-up his diplomatic technique, were struck by Byrnes' essentially intuitive approach to world politics." [414]

"Byrnes' interpreter at the Moscow conference, Charles Bohlen, although generally sympathetic to Byrnes' performance as Secretary, recalled the 'disorganized' and 'improvised' nature of Byrnes' summit diplomacy, and attributed it to Byrnes' 'irregular work habits' and the fact that 'he ran so much of foreign policy from within his head'." [414]

"George Kennan, a bitter critic of Byrnes' Moscow agreements, who as Charge' in Moscow also witnessed first-hand the Secretary's negotiating style, agreed that Byrnes was fundamentally an intuitive and opportunistic foreign policy maker... 'He plays his negotiations by ear, going into them with no clear or fixed plan, with no definite set of objectives or limitations. He relies entirely on his own agility and presence of mind and hopes to take advantage of tactical openings'." [415]

P4. One's control in 'moving' and 'shaping' history is:

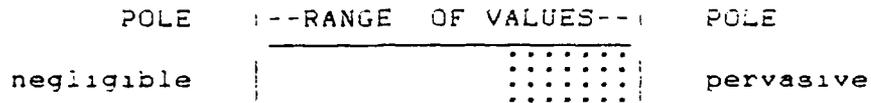


Byrnes' shifting political positions and orientations, which are a dominant theme throughout his career, make it clear that he perceived himself as shaped by, rather than shaping, the circumstances of historical development.

"Pointing to the shifting Democratic position ... during his public career, he candidly admitted that 'circumstances indeed alter political convictions'. Reflecting on such fluctuations in a purportedly principled position, Byrnes was somewhat amused by 'the fact that changing conditions frequently alter a point of view'." [38-39]

"The lifelong criterion for Byrnes' beliefs at any one moment was their effect on his personal political survival. If there is any consistent thread of thought running through Byrnes' long career in politics, it is ambition... [He] quit his foray into the unfamiliar sphere of international politics when it became clear that he would ... have to accept blame for his failure." [440-441]

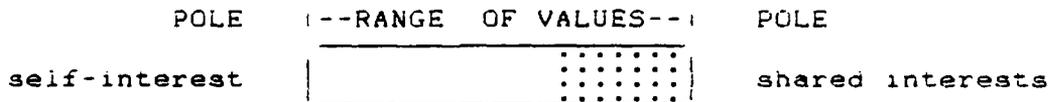
P5. The role of chance in human affairs and historical development is:



This inference derives directly from the preceding characterization of Byrnes as a respondent to rather than a molder of historical development, paralleling the argument of the previous chapter asserting a deterministic relationship between the decision-maker's views of control and the complementary role of chance. Application of this inference in the case at hand appears entirely consistent with the argument presented.

BYRNES' INSTRUMENTAL BELIEFS

Iia. The basis for establishing goals lies in:

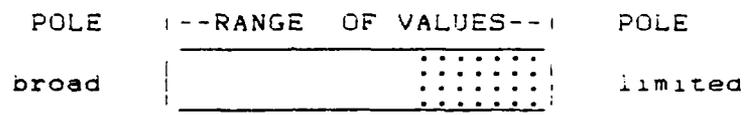


"Characterizing the conference at Yalta as a convincing demonstration of Allied unity and resolve, Byrnes revealed that he had been 'tremendously impressed by the sincerity and comradeship and genuine affection' among Stalin, Churchill and Roosevelt." [166]

"When pressed ... on how joint action by the Big Three would be operated in an emergency, Byrnes expressed his 'honest belief' that, faced with the threat of the combined power of America, Britain and Russia, such an emergency 'will never arise', since 'when it is known that the three great powers are going to act together, that there won't be any trouble'." [170]

"In the spring, 1945, Byrnes and a vast majority of the American people defined ... success in much the same terms Roosevelt had at Yalta that February - the preservation, in the postwar [era], of the wartime allied unity. At Yalta, Byrnes had seen firsthand Roosevelt expend every effort toward the goal of continued Big Three unity... He still retained as his goal the preservation of American-Soviet cooperation, ... [and] indeed, was committed to reversing the deterioration in the relations between the two countries." [221-222]

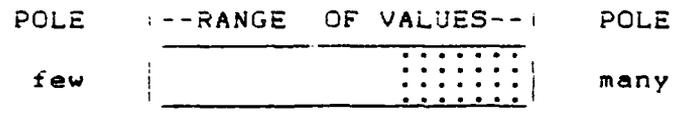
Iib. The manner of seeking goals should be:



"Byrnes' political philosophy as it developed in his early legislative career included the subordination of strict ideology or principle to policy based on two fundamental considerations: 1) the pragmatic criterion of 'will it work?', and 2) the political criterion of 'is it possible given contemporary political realities?'. Byrnes concisely summed up this philosophy of political pragmatism by referring to his career in the legislative branch as one of making 'the art of the politically possible meet desirable ends'." [38]

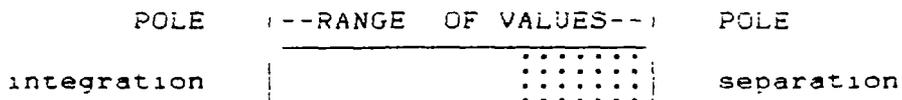
"Byrnes was thrust into a position of major responsibility, in negotiations with foreign leaders concerning issues having profound effects ... on the shape of the postwar world. Finding himself ... a leader in the 'whole new world' of international politics, Byrnes approached his problems as Secretary by relying on his life-long practice of pragmatic opportunism, of politics as the art of the possible, of using whatever means were available toward a desired end." [261]

Iic. The paths available for achievement of goals are:



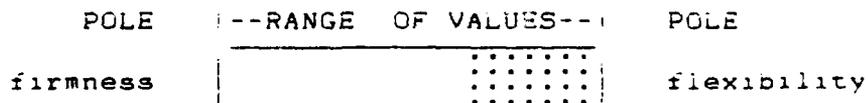
The inferences cited above serve equally to demonstrate Byrnes' opportunistic tendency to pursue any path which presented itself toward the attainment of a desired goal. His pragmatism suggests his willingness to undertake diverse approaches offering promise of success, with minimal regard to compromise of the principles involved. He can thus be fairly characterized as a believer in the potential for many available paths toward the achievement of goals.

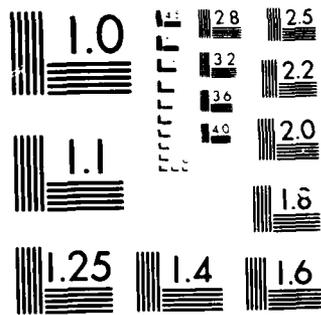
IId. Conflicts of values are best resolved through:



Byrnes' practice of value separation as a conflict-reduction mechanism is a necessary consequence of his separation of issues in the same pursuit. Two illustrative examples have already been introduced in which Byrnes advocated UN action on the Security Council veto issue in direct opposition to provisions of the Yalta agreements [230-232], and sought and apparently expected continued Soviet amity while still retaining the American atomic monopoly [280-287]. These conflicting value positions can be explained satisfactorily only within the framework of a belief set in which value separation is an essential feature.

I2a. The effective pursuit of goals requires:

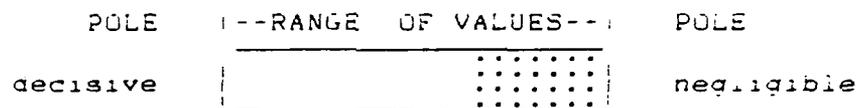




MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

"As throughout his public career, Byrnes, as Secretary of State, was most of all concerned, not with ideology or abstract principles, but with outward appearances and his own political survival. As a preeminently domestic politician, Byrnes' system of priorities and values, his entire world view, dictated that, if he were forced to choose between domestic and foreign versions of reality, his choice would be dictated by domestic political considerations, regardless of its international implications." [254]

13a. The assessment of risk as a factor in weighing outcome calculations is:



Byrnes' risk attitude can be deduced as a function of his intuitive, opportunistic approach to situations of uncertainty. The value portrayed suggests that risk calculations played little if any role in his pursuit of policy choices, a process guided more by often surprising feedback than foresight.

"Byrnes at times seemed out of touch with ... increasingly hostile sentiment. His primary concern ... was that the American people would hold him responsible for the breakdown of Allied cooperation. He therefore was genuinely surprised when his uncompromising stand [at the London conference of September 1945] won him praise in the United States. Byrnes was surprised, too, by the storm of criticism arising from his Moscow agreements. But the American reaction to both the London and Moscow conferences must have taught Byrnes something." [438]

His willingness to undertake apparently contradictory policy positions in such cases as the UN Security Council voting formula [230-232] and American atomic policy [280-287] reinforce the conclusion reflected above, that Byrnes' risk attitude figured minimally in the articulation and pursuit of his goals in international affairs.

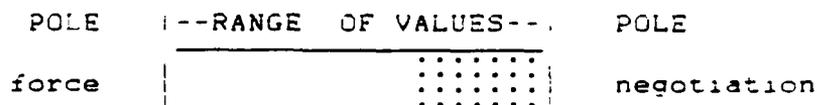
"He plays his negotiations by ear, going into them with no clear or fixed plan, with no definite set of objectives or limitations. He relies entirely on his own agility and presence of mind and hopes to take advantage of tactical openings'." [415]

The sole case which might be presented as evidencing sensitivity to timing on Byrnes' part is in his position regarding the unveiling of the atomic bomb.

"Byrnes might well have concluded that such an incredible new force would indeed 'control' reality in the postwar world. However, both he and Truman apparently decided that the Potsdam conference was not the time and place to assert that control. During the Interim Committee's deliberations on the timing and circumstances of unveiling the atomic secret to the world, Byrnes had forced acceptance of his contention that no one should know of the bomb before it was dramatically demonstrated against a Japanese target... It was clear that such a course as Byrnes advised risked a breach with the Soviet Union." [319]

Byrnes' failure to recognize this risk has already been cited in support of his minimal articulation of risk calculation; a careful reading of the extract above further indicates that Byrnes' position on the atomic issue had less to do with timing than with the relative dramatic impact of deeds over words.

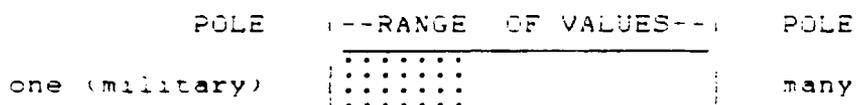
15a. The most useful tactics in pursuing goals are those which are based on:



Whatever the issues of the moment and means available to facilitate resolution, it is clear that negotiation and compromise were among the centerpieces of Byrnes' view of the proper conduct of international relations. This theme remains prominent

and consistent throughout his career, dating from his early support of the League of Nations as a negotiating forum of such potential import that he was later moved to describe it as "the tragic missed opportunity of 1919, when collective security and a League of Nations including the United States might have prevented the second world conflict." [42] His similarly unequivocal advocacy of the United Nations [126-127] further presages the pervasive preoccupation with negotiation which marked his tenure as Secretary of State.

15b. The dimensions of power are:



This characterization of Byrnes' unidimensional view of power derives primarily from his enthusiastic seizure upon the American atomic monopoly as an apparent end-all in influencing the environment of the postwar era.

"As a new and unforeseen factor in international relations, the atomic bomb became Byrnes' 'master card'. Hopefully, he could use such a revolutionary bargaining tool to gain Soviet cooperation... Such a tool might even give Byrnes the power to dictate a retroactive change in international reality. But whether Byrnes persuaded the Soviet Union to abandon, in substance, its version of reality, ... was only a question of the degree of Soviet cooperation." [253-254]

"The bomb's limitations as a diplomatic weapon were obvious, even to enthusiasts such as Stimson and Marshall. Yet this seemingly obvious logic is totally lacking in Byrnes' private utterances about 'saving China', by using the bomb to thwart Soviet victory claims in Asia... Byrnes' opportunistic, self-serving attitude toward the bomb as a diplomatic weapon is most vividly revealed in the contemporary record of events at Potsdam." [308]

Salient Byrnes beliefs portrayed in Messer's biography have now been assessed ranges of values along each of the continua introduced in Chapter 2, and can be recapitulated as profiles of the full and reduced operational code belief sets along the same lines discussed there. The figures which follow depict this profile, and on the pages succeeding the result is overlaid on the profile developed for the 'pure' cybernetic case.

A formal statistical measure of significance of the 'fit' obtained in this comparison does not appear justified by the subjective nature of the construct and judgemental factors employed in developing the profile; a simple percentage of values observed within the range predicted, however, may serve as a rough indicator of the power of the result. Ignoring for the moment previous arguments of relative centrality of the various beliefs in the interest of simplicity, consider that each of the continua of the profile can be awarded a score between zero and one based on that portion of the range of values in the actor's belief which fall within that predicted by the model. By this simplistic measure, Byrnes' full belief set achieves a score of 23 (22 wholes plus two halves) of a possible 24, or 96%, as a 'pure' cybernetic decision-maker; the reduced belief set scores 5.5 of 6, or 92%. Although perhaps no more graphically illustrated by this measure than by visual inspection, the close 'fit' obtained gives strong evidence that the policy decisions reached by Byrnes during his tenure in office can be explained with considerable confidence through the use of the cybernetic model.

AN OPERATIONAL CODE PROFILE OF JAMES F. BYRNES

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict		harmony
b source of conflict	int'l system		man
c nature of conflict	zero-sum		non-zero
d issues of conflict	linked		separable
e role of conflict	functional		dysfunct'l
f opponent actions	rational		ascriptive
P2a short-term prospects	optimist		pessimist
b long-term prospects	optimist		pessimist
c time bias	oneself		opponents
P3 course of future	deterministic		capricious
P4 control of history	total		none
P5 role of chance	negligible		pervasive
I1a basis of interests	self		shared
b goal definition	broad		limited
c paths to goals	few		many
d value resolution	integration		separation
I2a goal pursuit	firm		flexible
b strategy	total		incremental
I3a risk factor	decisive		negligible
b control of risk	ends		means
I4a short-term timing	important		irrelevant
b long-term timing	important		irrelevant
I5a tactics	force		negotiation
b dimensions of power	one		many

AN OPERATIONAL CODE PROFILE OF JAMES F. BYRNES

REDUCED BELIEF SET

	BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a	political universe	conflict	.....	harmony
d	issues of conflict	linked	.....	separable
e	role of conflict	functional	.....	dysfunctional
P4	control of history	total	.....	none
I3a	risk factor	decisive	.....	negligible
b	control of risk	ends	.....	means

JAMES F. BYRNES AS A CYBERNETIC DECISION-MAKER

BELIEF	POLE	---RANGE OF VALUES---		POLE
P1a political universe	conflict			harmony
b source of conflict	int'l system			man
c nature of conflict	zero-sum			non-zero
d issues of conflict	linked			separable
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P3 course of future	deterministic			capricious
P4 control of history	total			none
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b long-term timing	important			irrelevant
I5a tactics	force			negotiation
b dimensions of power	one			many

JAMES F. BYRNES AS A CYBERNETIC DECISION-MAKER

REDUCED BELIEF SET

	BELIEF	POLE	--RANGE OF VALUES--	POLE
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e	role of conflict	functional		dysfunctional
P4	control of history	total		none
Ba	risk factor	decisive		negligible
o	control of risk	ends		means

Lest the reader despair at the evident violation of the object of parsimony allowed in reaching the preceding conclusions, two key considerations bear recall. First, Byrnes' profile was of necessity constructed from the source material of a 'psycho-biography' rather than a formal operational code study. Under this constraint, beliefs relating to the specific elements of Byrnes' operational code had to be inferred from the text, rather than cited directly as categorized by the author. The latter capability, as will shortly become clear in the cases of Acheson and Dulles, renders the task far simpler. In the latter cases, following a dedicated methodology, beliefs relating to the various elements of the operational code have been deduced and organized by category, so that they can be extracted directly in support of the assignment of continuum values in constructing the profile, without further elaboration.

Second, all three cases undertaken here examine the entire content of the operational code, with the partial object of validating the inferences drawn in Chapter 2 regarding the efficacy of the reduced belief set as a typological construct. To the extent that the reduced set is sustained in this effort as a sufficient determinant of the 'best-fit' decisional model, the analytical task is further reduced accordingly. In the case of Byrnes, it is clear that the reduced belief set provides almost equally strong support to the characterization of the actor as a cybernetic decision-maker as does the full profile of his operational code beliefs.

In marked contrast to the inferred image of Byrnes, Dean Acheson, serving as Secretary of State from 1949 to 1953, is reputed as one who habitually sought wide ranges of alternatives in decisional situations and a measure of impact on affected values. This process is clearly evident, for example, in Acheson's advocacy of the MacArthur dismissal, which, given his perceived role as 'First Minister' of the nation, required unequivocal integration of diametrically conflicting values - in particular, the principle of civilian control of the military versus domestic political reaction - to arrive at his decision, in a characteristically analytic fashion.⁵² McLellan's delineation of Acheson's operational code supports this hypothesis.⁵³ McLellan derived 44 beliefs as comprising Acheson's operational code, and categorized and discussed them within in general framework of the construct. These beliefs are applied directly below to the assignment of a range of values on each operational code profile continuum, with only such elaboration as may be required to provide clarification or reinforce applicability.

Acheson's ultimate characterization as an analytic decision-maker can be anticipated in McLellan's summary description, which

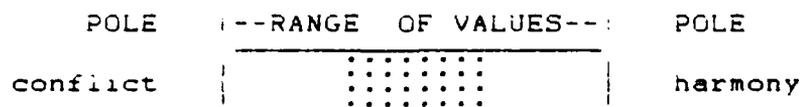
⁵² John W. Spanier, The Truman-MacArthur Controversy and the Korean War. New York: W.W. Norton Co., Inc., 1965; pp. 187-207.

⁵³ David McLellan, "The 'Operational Code' Approach to the Study of Political Leaders: Dean Acheson's Philosophical and Instrumental Beliefs." Canadian Journal of Political Science, vol. 4, 1971; pp. 52-75. Citations which follow are identified, as before, by page number in brackets.

cites the actor's "belief in activism of a problem-solving, system-building sort designed to yield more control over the environment." [75] Analytic formulation is specifically suggested by "a pragmatic, strategic, non-ideological view of the universe, one in which the opponent is viewed as a threat but with whom one can coexist" [74-75], facilitating an untainted 'definition of the situation'; "a belief in the world as a seamless web in which all relations are relative and contingent, and in which one dogmatizes at one's own risk" [75] in turn promotes broad, comprehensive processes of 'search' and 'revision'. A "belief in the worth of intelligence and conscious effort to control one's environment" in "a world of other nations and governments subject to a myriad of pressures and uncertainties with whom one must seek to cooperate and get along" [75] further presages an inclination to rational, analytical means of solution. These important clues can be reinforced and systematized in a review of Acheson's complete belief set as portrayed by McLellan.

ACHESON'S PHILOSOPHICAL BELIEFS

Pla. The political universe is essentially one of:



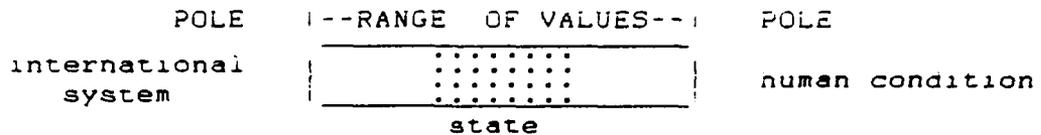
Acheson's mixed views of the essential nature of the universe are characterized in beliefs which convey elements of both conflict and harmony, as attained through human effort.

"Politics is man's struggle to maintain a manageable social universe." [54]

"The substance of politics is relative and contingent." [57]

"Politics is the art of maintaining a functioning social system. Conflict is an integral part of politics, but conflict only becomes acute when the system can no longer provide for change or when it breaks down so completely as to produce desperate men and intolerable conditions." [55]

Pib. The principal sources of conflict are to be found in the nature of the:



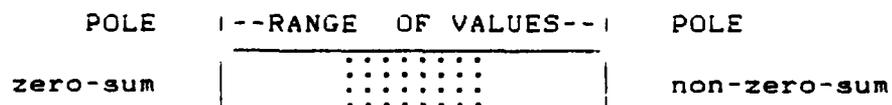
Acheson's beliefs reflect elements of all three echelons of the structure of conflict, and the interaction between them, both in characterizing the nature of conflict and its potential control.

"Man's problems are social and collective in nature and therefore susceptible to human control... The form which man's political problems take are essentially the outgrowth of his social existence... International politics differ from domestic politics in the much slighter degree of consensus that prevails and in the absence of any sovereign authority." [54]

"While all men ought to participate in the life of the polis, civilization depends upon the wisdom, industry, and courage of a small number of its members." [55]

"There can be no artificial separation between an individual's private and public moral codes." [56]

Pic. The basic nature of conflict is:

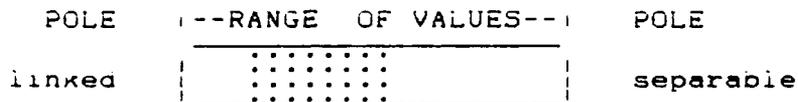


As in most regards, Acheson's attitudes on the nature and potential outcomes of conflict reflect a broad range of possibilities, justifying the assignment of a middle range of values to this variable.

"A fundamental obstacle to success in negotiations with the Soviet Union about our common problems is the expectation which Soviet leaders hold of the collapse of the non-Soviet world." [58]

"Despite the moral repugnance of the Soviet communist system and the threat of Soviet aggression, peaceful coexistence is possible." [59]

Pid. The various issues of conflict are generally:



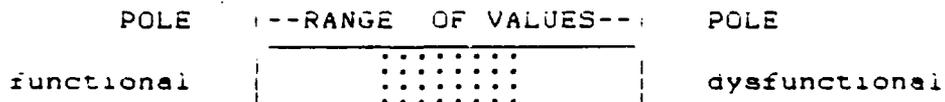
"[Acheson held] a belief in the world as a seamless web in which all relations are relative or contingent." [75]

"To govern is to make knowledge the basis of action." [56]

"Policy in a democratic society must rest upon popular knowledge and understanding." [56]

The above citations provide some indication of not only receptiveness but at least mild predisposition toward linkage of issues, hence the inference of a range of values in the preceding dimension which inclines somewhat in the direction of a priori linking of the issues of conflict.

Pie. The role of conflict is :



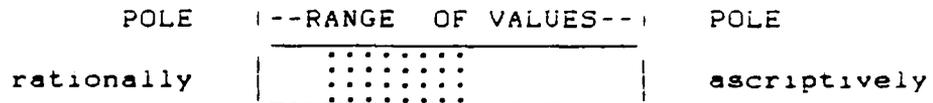
"The right of an opposition to exist is absolute." [57]

"The substance of politics is relative and contingent." [57]

"Nothing justifies America getting involved in a war with the Soviet Union short of deliberate Soviet aggression." [59]

"Situations of strength implies that to be effective requires a certain level of preparedness and confidence regardless of what effect it may have on the opponent." [70]

P1f. The actions and intentions of the opponent may be determined:



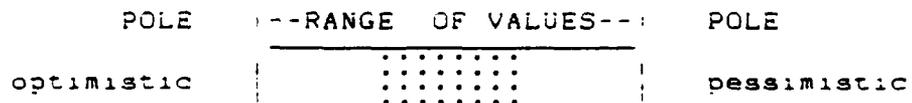
Acheson's recurrent efforts to rationalize behavior of the opponent, even while ascribing generalized motives and characteristics, are reflected in his conclusions regarding the Soviet Union.

"(phase 1: 1945-6) The Soviet Union, because of the nature of its internal regime and its obsessive distrust of the outside world, plays a divisive and obstructionist role in world politics." [57]

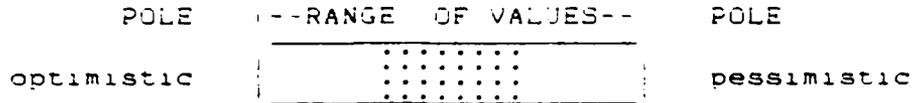
"(phase 2, 1947-52) The Soviet Union is an aggressively imperialist state seeking to impose its domination where it can and to sow confusion and disintegration where its grasp falls short." [58]

"The Soviet government is highly realistic and we have seen time after time it can adjust itself to the facts." [59]

P2a. With respect to short-term prospects for realization of goals, one should be:



P2b. With respect to long-term aspirations for realization of one's most basic goals and objectives, one should be:



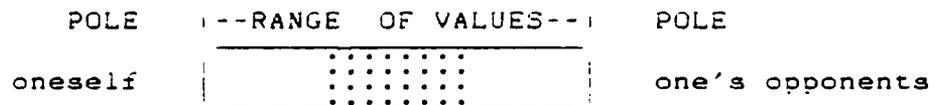
"Acheson's views are divided between optimism and pessimism both for the short run and the long run... He was not pessimistic (for example) about the capacity of the Soviet system to outdo the West or about the appeal of communism as the wave of the future. But he was pessimistic about the seeming incapacity of the West to do what needed to be done in time to redeem control over its destiny." [61-62]

"Man's past record does not give much ground for optimism." [61]

"You can always do something about life." [61]

"By doing what must be done man may yet save himself from the worst." [61]

P2c. Time is on the side of:

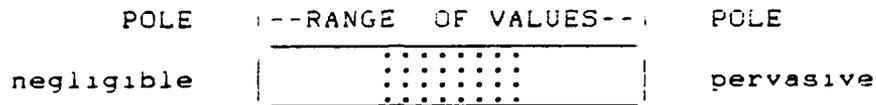


Acheson clearly judges time as a factor biased in no one's favor, dynamic but indeterminate.

"We are in a very, very dangerous period, a period which seems to get increasingly dangerous as it develops... It seems to me that disaster can be avoided, but it can be avoided only if there is a great deal of common sense exercised throughout our country." [62]

"He counted neither upon a transformation of the Soviet system nor upon an assumed identity of interests between the Russian and American people which would come to the fore once the communist regime was overthrown. He permitted himself only the most guarded hopes of any eventual transformation of the international system." [62]

P5. The role of chance in human affairs and historical development is:



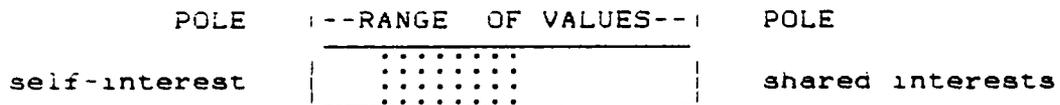
"Chance can never be completely eliminated, but it is the statesman's role to reduce to a minimum the domain of chance." [65]

"The statesman must often act upon incomplete knowledge." [66]

"The statesman must base his decisions upon the greatest knowledge and information possible, not upon mere hunch or intuition." [66]

ACHESON'S INSTRUMENTAL BELIEFS

Ila. The basis for establishing goals lies in:



Many of Acheson's beliefs reflect a recognition of the importance and prospective value of exploiting shared interests to achieve common goals with both allies and adversaries; his outlook is carefully guarded by the primacy of security needs, however, motivating the characterization above of a range of values inclined somewhat toward self-interest.

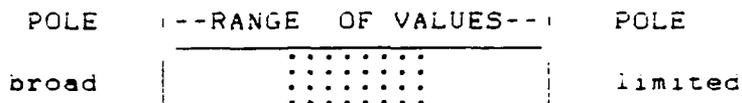
"The United States must always consider the interests of its allies." [60]

"The United States cannot act in the world just as it pleases. There are limits and opinions which it must respect." [60]

"America should be sympathetic to but not substitute the national interest of its allies for its own." [71]

"Do not undertake negotiations with the opponent until you enjoy a situation of strength."

iib. The manner of seeking goals should be:

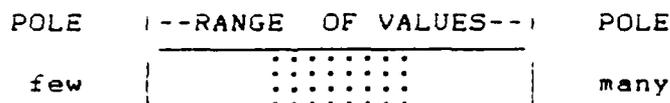


"A power approach to international politics implies a strategic view of the universe in which not all things are possible." [66]

"Since a nation's power is not unlimited and the claims upon it are complex and multifarious the task of statecraft is to decide what is necessary and what is expendable." [66]

"A strategic view as distinguished from an ideological or moralistic view requires that the statesman differentiate among various regions of the world in order of their strategic importance. It also requires that judgments be made about the risks and cost-effectiveness of undertaking action in one region as opposed to another, and about the value of one form of commitment as opposed to another." [67]

iic. The paths available for achievement of goals are:

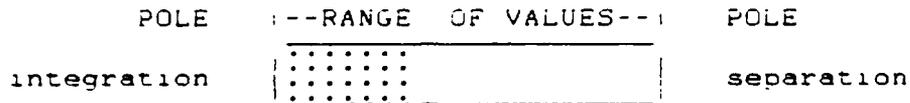


"Control or mastery of the future is best achieved not by basing action on moral absolutes or the abstractions of power politics, but rather by applying a pragmatic approach towards furthering one's national interests within the framework of a broader concern shared with others in constructing or maintaining a manageable international system." [62]

"When confronted by a strong opponent who will not cooperate minimally with your pragmatic approach to international system-building, it is necessary to resort to a power strategy that seeks to create 'situations of strength' in order to move the recalcitrant, noncooperative opponent to limited agreements." [69]

"However, a 'situations of strength' strategy should not be applied on behalf of foreign policy objectives that are infeasible, too costly, or too risky." [69]

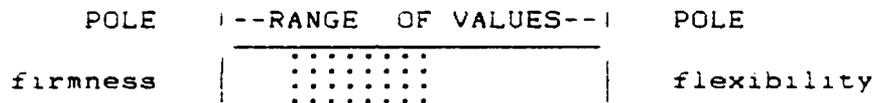
I1d. Conflicts of values are best resolved through:



"The statesman must base his decisions upon the greatest knowledge and information possible, not upon mere hunch and intuition." [66]

"Many problems are susceptible to solution, provided the statesman discovers the 'missing component' the presence of which would make a difficult situation manageable. The art of finding the missing component lay in mastering a knowledge of all the elements present and potential in a situation and determining what new increment, if added, would make a difference." [63]

I2a. The effective pursuit of goals requires:



Elements of flexibility are clearly evident in various Acheson beliefs already replicated; the 'situations of strength' philosophy introduced above, however, suggests strongly that the balance on this continuum should at least provide the potential for firmness as the most effective vehicle of goal pursuit. Acheson's inclination is to view the power position as the 'bottom line' in dealing with a recalcitrant adversary.

"With an opponent whose goals are unlimited and methods unpredictable, strength-building comes before negotiations." [70]

"Situations of strength implies that to be effective requires a certain level of preparedness and confidence regardless of what effect it may have on the opponent." [70]

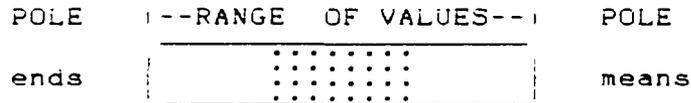
"The United States should be a net producer and not a net consumer of security." [71]

put itself in the position of provoking war with the Soviet Union." [71]

"Greater risks can be run against weaker powers." [72]

"Do not take risks which lead to loss of control." [72]

13b. Risks are controlled most effectively by limiting:



Acheson maintains a delicate but systematic balance in defining ends and exploring means in such a manner as to minimize the risks incurred. The scope of goals he sought as reflected in his first instrumental belief considered both the responsibilities and limitations of American power; and while he eschewed the invocation of morale principles in international discourse, he remained wedded to democratic ideals in selecting means to attain desired objectives.

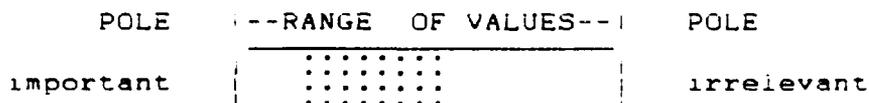
"The United States cannot act in the world just as it pleases. There are limits and opinions which it must respect." [60]

"The ends of American foreign policy do not justify employing any and all means." [73]

"The means which a democracy employs must be essentially consistent with its ideals and with the limits imposed by the nation-state system." [73]

"War is not a desirable or advantageous means for advancing one's goals." [73]

14a. Timing in the short term is:



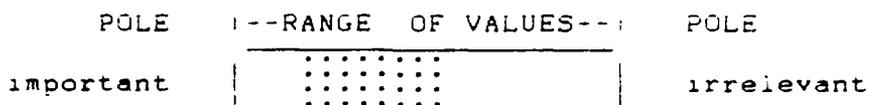
"In dealing with allies and others it is appropriate to act rapidly and decisively to exploit every opportunity for developing strength and unity." [73]

"Negotiate, if necessary, when not to do so would risk miscalculation or undesirable costs." [72]

"The statesman must often act upon incomplete knowledge." [66]

"System-building diplomacy requires an intense preoccupation with timing. The statesman cannot simply wait to react; he must be constantly alert to the possibilities and be prepared to make the most of them." [73]

14b. Timing in the long term is:

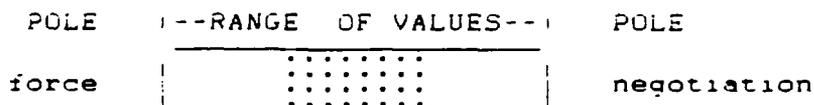


"Do not undertake negotiations with the opponent until you enjoy a situation of strength." [72]

"Timing is of the essence when dealing with a multitude of variables. The statesman must work patiently to get one situation in order so as to be able to arrange the next." [73]

In both the short- and long-term cases, Acheson's beliefs suggest an emphasis on timing which extends somewhat beyond its utility as an analytic factor, thus posing a significance of its own beyond the immediate demands of the situation. The values assigned to these variables accordingly portray timing in a somewhat independently important range.

15a. The most useful tactics in pursuing goals are those which are based on:

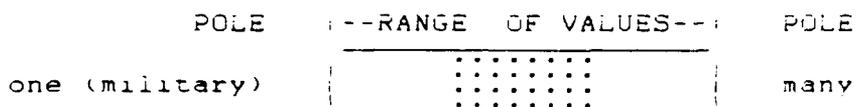


"Nothing justifies America getting involved in a war with the Soviet Union short of deliberate Soviet aggression." [59]

"Not all problems are susceptible to a problem-solving approach; some are peculiarly intractable and can be controlled or influenced, if at all, only in terms of power." [64]

"Negotiate, if necessary, when not to do so would risk miscalculation or undesirable costs." [72]

15b. The dimensions of power are:



A broad range of both tactical alternatives and recognized power dimensions are implicit throughout Acheson's belief set. Various elements demonstrate a willingness to undertake efforts throughout the spectrum of international relations to improve the prospects of control and realization of fundamental goals. His views clearly erode, however, toward both extremes: negotiate when necessary, make war only against direct aggression. He is thus appropriately characterized as holding an open-ended, median tactical view.

As before, beliefs outlined in the study have been compiled into profiles of the full and reduced belief sets depicted in the figures following, and the result projected onto the analytic profile developed earlier. The 'fit' is again a close one, with overlaps of 83% for the full and 92% for the reduced belief set, which would suggest that Acheson's policy decisions could be effectively viewed in the framework of an analytic model.

AN OPERATIONAL CODE PROFILE OF DEAN ACHESON

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict		harmony
b source of conflict	int'l system		man
c nature of conflict	zero-sum		non-zero
d issues of conflict	linked		separable
e role of conflict	functional		dysfunct'l
f opponent actions	rational		ascriptive
P2a short-term prospects	optimist		pessimist
b long-term prospects	optimist		pessimist
c time bias	oneself		opponents
P3 course of future	deterministic		capricious
P4 control of history	total		none
P5 role of chance	negligible		pervasive
I1a basis of interests	self		shared
b goal definition	broad		limited
c paths to goals	few		many
d value resolution	integration		separation
I2a goal pursuit	firm		flexible
b strategy	total		incremental
I3a risk factor	decisive		negligible
b control of risk	ends		means
I4a short-term timing	important		irrelevant
b long-term timing	important		irrelevant
I5a tactics	force		negotiation
b dimensions of power	one		many

AN OPERATIONAL CODE PROFILE OF DEAN ACHESON

REDUCED BELIEF SET

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict	.....	harmony
d issues of conflict	linked	.....	separable
e role of conflict	functional	.....	dysfunct'l
P4 control of history	total	.....	none
I3a risk factor	decisive	.....	negligible
o control of risk	ends	.....	means

DEAN ACHESON AS AN ANALYTIC DECISION-MAKER

	BELIEF	POLE	--RANGE OF VALUES--	POLE
P1a	political universe	conflict		harmony
b	source of conflict	int'l system		man
c	nature of conflict	zero-sum		non-zero
d	issues of conflict	linked		separable
e	role of conflict	functional		dysfunct'l
f	opponent actions	rational		ascriptive
P2a	short-term prospects	optimist		pessimist
b	long-term prospects	optimist		pessimist
c	time bias	oneseif		opponents
P3	course of future	deterministic		capricious
P4	control of history	total		none
P5	role of chance	total		none
I1a	basis of interests	self		shared
b	goal definition	broad		limited
c	paths to goals	few		many
d	value resolution	integration		separation
I2a	goal pursuit	firm		flexible
b	strategy	total		incremental
I3a	risk factor	decisive		negligible
b	control of risk	ends		means
I4a	short-term timing	important		irrelevant
b	long-term timing	important		irrelevant
I5a	tactics	force		negotiation
b	dimensions of power	one		many

DEAN ACHESON AS AN ANALYTIC DECISION-MAKER

REDUCED BELIEF SET

BELIEF	POLE	--RANGE OF VALUES--	POLE
P1a political universe	conflict		harmony
a issues of conflict	linked		separable
e role of conflict	functional		dysfunctional
P4 control of history	total		none
I3a risk factor	decisive		negligible
b control of risk	ends		means

John Foster Dulles, Secretary of State under President Eisenhower from 1953 to 1959, is noted for his role in the sustainment of the policy of massive retaliation as a deterrent to Soviet initiatives. There is considerable evidence to indicate that this position derived in large measure from Dulles' perceptions of a conflictual, zero-sum political universe in which 'right' action was to be guided by categorical moral principles, notions strongly indicative of cognitive processes at work.⁵⁴ The potential utility of the cognitive model as a descriptor of Dulles' decisional behavior can be examined by use of the results of Holsti's portrayal of his operational code.⁵⁵ Holsti developed 41 beliefs and accompanying discussion to derive Dulles' operational code in terms of its ten functional categories, thus permitting a reasonably straightforward inferential process to arrive at value ranges comprising the operational code profile.

Holsti provides little in this study in the way of a summary assessment of the import of Dulles' operational code, but his work in Enemies in Politics offers important clues to support

54 David J. Finlay, Ole R. Holsti, and Richard R. Fagen, Enemies in Politics. Chicago: Rand McNally & Co., 1967; pp. 25-96.

55 Ole R. Holsti, "The 'Operational Code' Approach to the Study of Political Leaders: John Foster Dulles' Philosophical and Instrumental Beliefs." Canadian Journal of Political Science, vol 3, 1970; pp. 123-157. Subsequent citations of this study used to develop Dulles' operational code profile are indicated by page number in brackets.

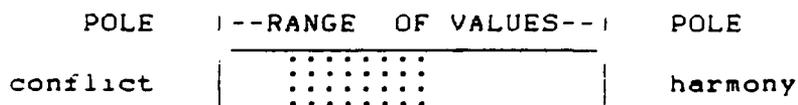
his characterization as a cognitive decision-maker. In tracing Dulles' image of the Soviet Union, Holsti observes that he "placed a high premium on consistency between elements of his attitudes:... despite information which might challenge his beliefs, any fundamental change in attitude would appear unlikely."⁵⁶ His inferred formula for maintaining the consistency of his attitudes offers a classic cognitive reduction mechanism:

"Four strategies for restoring a balance between Dulles' belief system and discrepant information appear most likely: discrediting the source of the new information; reinterpreting the new information so as to be consistent with the belief system; searching for other information consistent with preexisting attitudes; and differentiating between various [information-generating] elements in the Soviet Union."⁵⁷

Holsti's operational code study provides the opportunity to further explore this characterization in terms of its sustainability in a review and analysis of Dulles' complete belief set, and its representation as an operational code profile to compare to that expected of the 'pure-type' cognitive decision-maker.

DULLES' PHILOSOPHICAL BELIEFS

Pla. The political universe is essentially one of:



⁵⁶ Finlay, Holsti & Fagen, op. cit.: p.46.

⁵⁷ Ibid.

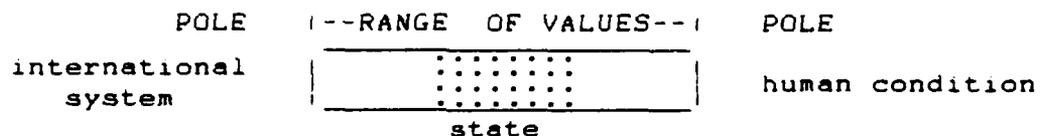
The range of values assigned to this variable reflects a Dulles view in which the universe is essentially conflictual, but with some ameliorating human factors.

"Conflict is the basic form of human interaction." [126]

"Conflict was mitigated, however, by man's lack of self-sufficiency and by some emotional traits, including gregariousness and a capacity for self-sacrifice." [126]

"By institutionalizing the common desire to keep the struggle for power and satisfaction within tolerable limits, government provided the only practical alternative to the potential chaos which threatens to arise from man's selfishness." [127]

P1b. The principal sources of conflict are to be found in the nature of the:



Dulles' beliefs reflect elements of all three echelons which contribute to conflict, a theme so prevalent in his outlook as perhaps to justify assigning the entire range of values to this variable. This variety of views, however, appears to result from an evolution of his attitudes over time rather than a consistently broad outlook, with his ultimate belief resting in the median range indicated.

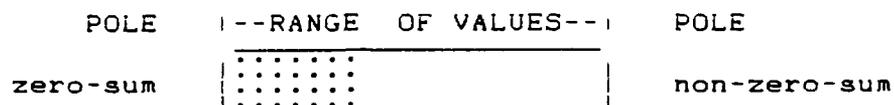
"Man's selfish and emotional nature is the primary source of individual motivation and social dynamics." [126]

"(early version) The nature of foreign policy is determined by the attributes of the nation's population." [128]

"(later version) The nature of foreign policy is determined by the spiritual qualities of those who formulate it." [129]

"Where earlier he had found the cause of war in the inherent defects of both human nature and the international system, by the time he became Secretary of State he located it not in the system but in certain malignant members of it - communists and communist nations." [132]

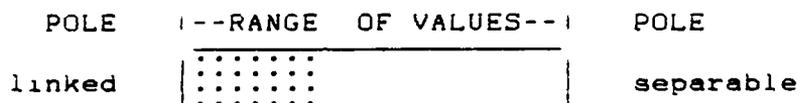
P1c. The basic nature of conflict is:



Dulles' view on this point is unmistakable and unequivocal:

"Cold war politics are a zero-sum game." [129]

P1d. The various issues of conflict are generally:



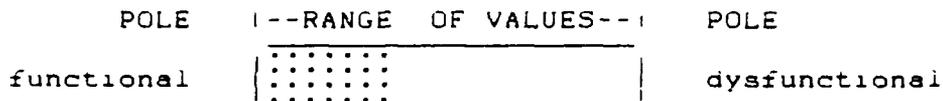
Dulles' definition of the issues and objectives of international conflict in the context of a cohesive moral and spiritual code implies a close relationship among issues arising from this common philosophic thread. He visualizes a web of interests forming a comprehensive whole, in which a threat to one is a threat to the whole.

"The cold war is fundamentally a moral rather than a political conflict." [129]

"Once one's interests are defined, credibility requires that all of them be defended." [146]

"From his view of the cold war as an ethical struggle, it followed that permitting any breach of the line was not only politically foolish - it was also a dereliction of moral obligation." [147]

Ple. The role of conflict is :

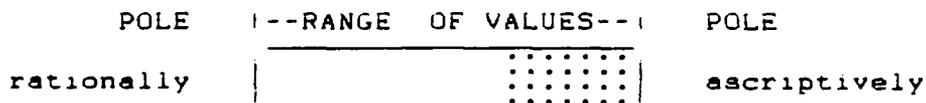


The threat and hence at least the potential of conflict hold a central place in Dulles' world view as the preeminent motive of the social contract.

"Social cohesion depends upon the existence of external enemies." [127]

"Leadership goes to those who have mastered the art of arousing in their followers a high degree of emotional energy." [127]

P1f. The actions and intentions of the opponent may be determined:



Dulles' moralistic view leads inevitably to a characterization of both allies and foes in ascriptive, spiritualistic terms.

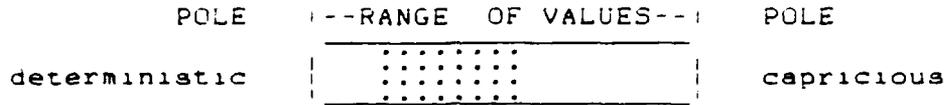
"Because the communists were not simply more dynamic, more selfish, or more aggressive, but they in fact represented the antithesis of the most fundamental values of the free world ... cold war conflicts were nothing less than the struggle of good versus evil." [132]

"Only nations of the free world are capable of adapting to change without indiscriminantly discarding existing values and institutions." [131]

"The moral law, happily, is a universal law', but it is recognized and accepted only by some nations." [131]

"The free world includes all nations which adhere to a spiritual view of man and life." [131]

P3. The course of the political future is essentially:



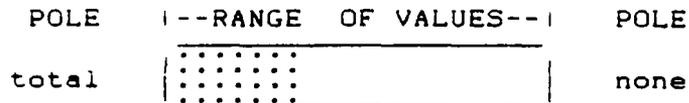
Consistency in a belief set is in itself an indicator of ascendant cognitive processes. Dulles' view of the future as ultimately predetermined by moral forces, but with unpredictable short-term dangers, is a mirror image of the corresponding elements of his second philosophical belief outlined above.

"History is ultimately moving towards a natural order based on moral law." [136]

"'Certainly the unpredicted and unpredictable play a great part in human affairs'." [136]

"For the long run ... the values he cherished would ultimately triumph over the forces of materialism and atheism. His views about the short-term future were generally gloomy, [however,] ... and he was much less certain about predicting the course of events." [137]

P4. One's control in 'moving' and 'shaping' history is:



"'I do believe that whatever the conditions are you have an opportunity to mold them'." [137]

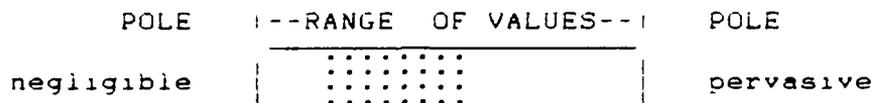
"Those possessed of a righteous faith have an obligation to act." [137]

"'The dynamic usually prevails over the static'." [137]

By asserting the mandate for positive action which would bring to realization the triumph of a generally predetermined

historical process, Dulles asserts a belief in total control over development. The ultimate outcome, in his view, is sure, and the dynamic good works of moral leaders sure to bring it to pass.

P5. The role of chance in human affairs and historical development is:



"The risk of accidents in foreign affairs is negligible." [139]

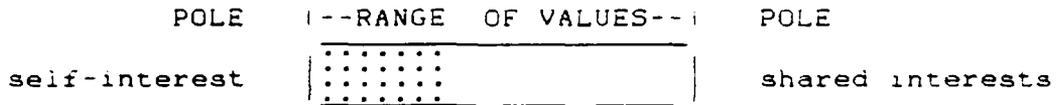
"War by miscalculation represents the greatest danger to the peace." [139]

The distinction which Dulles attempts to draw between 'accident' ("events which take place contrary to one's desires" [139]) and 'miscalculation' ("events which result from conscious decisions, the consequences of which are incorrectly forecast" [139]) makes a characterization of this variable somewhat problematic. Assignment of a range of values toward the lower end of the spectrum represents the conclusion that the 'accident' resembles more closely, although perhaps not exclusively, the 'role of chance' being measured. This conclusion rests on the proposition that miscalculation can be controlled, while accident cannot. The distinction will merit further consideration in assessing risk attitudes as part of the instrumental beliefs, but Dulles appears to recognize the point:

"We have faith that man, who has been endowed with wit to devise the means of his self-destruction, also has enough wit to keep those means under effective control'." [140]

DULLES' INSTRUMENTAL BELIEFS

Iia. The basis for establishing goals lies in:

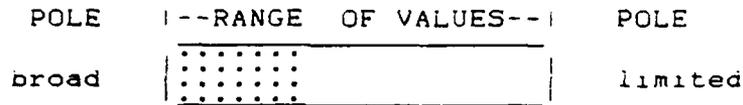


"Political goals must be based upon moral principles rather than expediency." [140]

"The self-interest of free world nations and moral law tend to coincide." [138]

"In following their own enlightened interests, the states of the free world adhered to the moral law and created the moral power which would insure their own success... 'The reality of the matter is that the United States, by every standard of measurement, is the world's greatest power not only materially but spiritually'." [139]

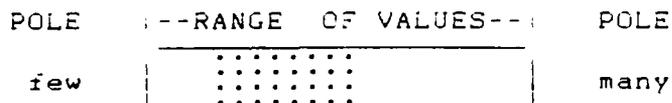
Iib. The manner of seeking goals should be:



Although Dulles realistically admitted that "there are times when to seek the perfect is to lose the good" [141], the weight of evidence suggests that his definition and pursuit of goals would be broad. His formulation of goals in terms of moral principles, and his characterization of history as a struggle of good and evil, provide strong support to this conclusion.

"There is a moral or natural law not made by man which determines right or wrong and only those who conform to it will escape disaster'... Thus, there was the need, indeed the duty, to ensure this end by translating one's 'dynamic faith' into good works." [138]

Iic. The paths available for achievement of goals are:



Duiles revealed a series of views on the pursuit of goals which are synthesized in the above assignment of a range of values inclined toward the few. Selected beliefs portray a consideration of multiple approaches either against an adversary or as a public advocate:

"An adversary may be indicted for either utopian idealism or appeasement." [141]

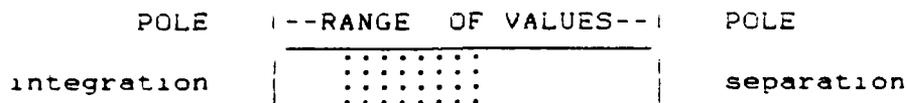
"The public official's first responsibility is to serve as his client's advocate." [141]

Elsewhere, however, it becomes clear that success is limited to those paths which conform to the moral ethic.

"Those who display spiritual qualities in the quest of their own ends will automatically fulfill their moral and social obligations." [138]

"Those who display spiritual qualities will be rewarded with success." [138]

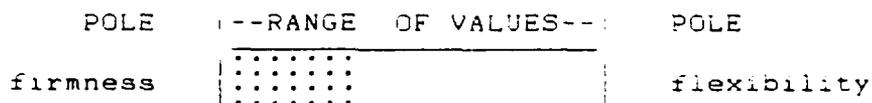
IId. Conflicts of values are best resolved through:



"He viewed the structure of American commitments as an arch in which each component part was a keystone, even though in some cases they were of more symbolic than political or geographic value. Because a successful attack on any stone in that arch would eventually bring on the collapse of the entire edifice, one must not differentiate the symbolic from the real." [146]

This passage reflects both the extent and limitations of Duiles' integration of values. He plainly holds that national interests are closely interrelated, but falls short of assigning any relative weight among commitments, hence practicing integration, but of an incomplete sort.

I2a. The effective pursuit of goals requires:



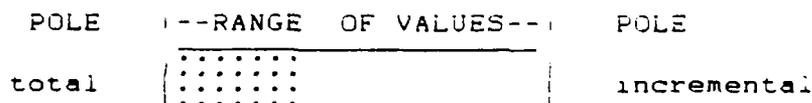
There is little flexibility evident in Duiles' black-and-white view of the world. Despite his willingness cited earlier to accept good results rather than insist upon unattainable perfect ones, his general outlook demands unequivocal firmness in pursuing policy objectives.

"Once one's interests are defined, credibility requires that all of them be defended." [146]

"A despotic regime can maintain itself in power as long as it is able to gain external victories." [147]

"Even minor victories will encourage an adversary to become more reckless in the quest for future gains." [147]

I2b. The most effective manner of pursuing strategies is:

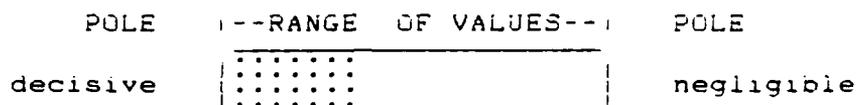


"The dynamic usually prevails over the static'." [137]

"Political leaders can best generate support by appealing to morality rather than to self-interest." [142]

These beliefs, coupled with the mandate to defend all articulated interests cited above, convey a Dulles advocacy of total strategy in seeking the goals of the protracted good-versus-evil struggle.

13a. The assessment of risk as a factor in weighing outcome calculations is:



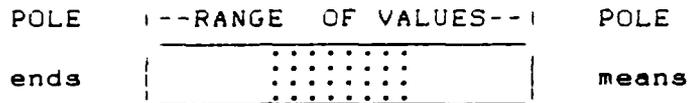
Dulles beliefs outlined earlier, particularly those wedded to firmness in the pursuit of policy goals, betray a strong aversion to risk, thus assigning it a decisive role in the assessment process. Herein perhaps lies the appropriate distinction between the concepts of 'accident' and 'miscalculation' discussed previously under philosophical belief #5. Where accidents are agents of chance, which he discounts as important factors, "one of Dulles' primary concerns in international politics was to reduce the possibilities of miscalculation" [147], by positive action to send unmistakable signals and thereby minimize risk. He makes it clear that he weighs risk heavily against other factors in devising strategy:

"When the adversary is powerful, minimize the risks of conflict." [143]

"When the adversary is weaker, be willing to run high risks of conflict." [143]

"Although his name is often associated with 'brinkmanship', his policies were often a good deal more cautious." [143]

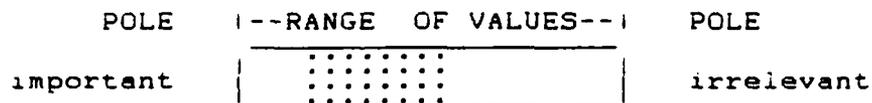
I3b. Risks are controlled most effectively by limiting:



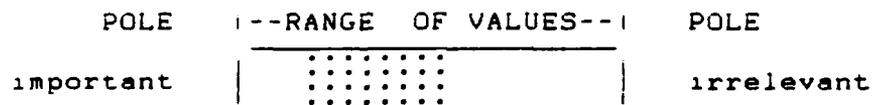
"Dulles generally bypassed normative questions about the linkages between means and ends... Even friendly observers of Dullesian diplomacy have suggested that this complacency was little more than a cover for the more pragmatic doctrine that the ends justify the means." [150]

This assessment may be somewhat harsh, but realistic in the context of the moral imperatives which permeate so much of Dulles' operational code. The assignment of a median range of values provides little more in this case than a simplistic representation of the proposition that means in pursuit of moral ends are themselves moral, and neither may be compromised in the struggle.

I4a. Timing in the short term is:



I4b. Timing in the long term is:

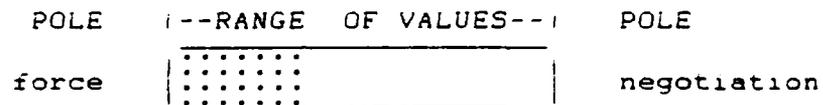


"Aggressive initiatives which might sacrifice the better future are to be avoided." [148]

"Totalitarian regimes are vulnerable to destruction from within." [152]

Recalling the Dulles view of the march of history favoring moral force, and his corresponding outlook of short-term pessimism tempered by long-term optimism, coupled with the mandate for moral action, timing arises as a factor of moderate importance in both the short and long term. Still, tactics, as outlined below, are more strictly tempered by the dictates of principle than by considerations of timing.

15a. The most useful tactics in pursuing goals are those which are based on:



"Do not undertake negotiations when the adversary is in a position of strength." [148]

"When the adversary seeks negotiations, it is a sign of weakness and/or failure; hence one should push harder rather than negotiate." [148]

"Fundamental cold war issues, being at root moral ones, are rarely susceptible to negotiation or compromise." [130]

The first two beliefs cited above reflect a certain sensitivity to timing, but the resulting prescription for action is notably the same in both cases, as in the third: as a general rule, do not negotiate.

15b. The dimensions of power are:



"Power is the key to success in dealing with communist leaders." [151]

"Free societies must avoid becoming garrison states." [151]

"Moral power is the most basic element of power." [131]

While military power is a clear and omnipresent element in Dulles' observation that "the enemies of the free world respected only military strength, he was not without reservations about reliance upon military means." [151] His aversion to government excess in the search for security, his recognition of the importance of economic as well as military power, and his ultimate reliance upon spiritual strength as the motive force of historical development, all combine to moderate his view of the dimensions of power, at least to the extent indicated.

The results discussed in this review of Dulles' operational code have once more been compiled as a set of decision-making profiles, depicted in the following figures, then superimposed on the generalized cognitive profile. The outcome in this case is somewhat less striking, with overlaps of 75% of the full belief set and 83% for the reduced profile. This result may owe to the less explicit nature of the model, or perhaps to the alternative that Dulles is simply the least 'pure type' among those examined. The overlap to be noted still remains extensive, however, and clearly provides the 'best fit' of the three models considered, thus furnishing reasonable evidence to indicate that the cognitive paradigm would be useful as a tool to explain policy decisions taken by Dulles in his role as Secretary of State.

AN OPERATIONAL CODE PROFILE OF JOHN FOSTER DULLES

	BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a	political universe	conflict	.....	harmony
b	source of conflict	int'l system	.....	man
c	nature of conflict	zero-sum	.....	non-zero
d	issues of conflict	linked	.....	separable
e	role of conflict	functional	.....	dysfunct'l
f	opponent actions	rational	.....	ascriptive
P2a	short-term prospects	optimist	.....	pessimist
b	long-term prospects	optimist	.....	pessimist
c	time bias	oneself	.....	opponents
P3	course of future	deterministic	.....	capricious
P4	control of history	total	.....	none
P5	role of chance	negligible	.....	pervasive
I1a	basis of interests	self	.....	shared
b	goal definition	broad	.....	limited
c	paths to goals	few	.....	many
d	value resolution	integration	.....	separation
I2a	goal pursuit	firm	.....	flexible
b	strategy	total	.....	incremental
I3a	risk factor	decisive	.....	negligible
b	control of risk	ends	.....	means
I4a	short-term timing	important	.....	irrelevant
b	long-term timing	important	.....	irrelevant
I5a	tactics	force	.....	negotiation
b	dimensions of power	one	.....	many

AN OPERATIONAL CODE PROFILE OF JOHN FOSTER DULLES

REDUCED BELIEF SET

BELIEF	POLE	|--RANGE OF VALUES--|	POLE
P1a political universe	conflict	.....	harmony
d issues of conflict	linked	.....	separable
e role of conflict	functional	.....	dysfunct'l
P4 control of history	total	.....	none
I3a risk factor	decisive	.....	negligible
b control of risk	ends	.....	means

JOHN FOSTER DULLES AS A COGNITIVE DECISION-MAKER

BELIEF	POLE	---RANGE OF VALUES---	POLE
P1a political universe	conflict	[diagram]	harmony
b source of conflict	int'l system	[diagram]	man
c nature of conflict	zero-sum	[diagram]	non-zero
d issues of conflict	linked	[diagram]	separable
e role of conflict	functional	[diagram]	dysfunct'l
f opponent actions	rational	[diagram]	ascriptive
P2a short-term prospects	optimist	[diagram]	pessimist
b long-term prospects	optimist	[diagram]	pessimist
c time bias	oneself	[diagram]	opponents
P3 course of future	deterministic	[diagram]	capricious
P4 control of history	total	[diagram]	none
P5 role of chance	negligible	[diagram]	pervasive
I1a basis of interests	self	[diagram]	shared
b goal definition	broad	[diagram]	limited
c paths to goals	few	[diagram]	many
d value resolution	integration	[diagram]	separation
I2a goal pursuit	firm	[diagram]	flexible
b strategy	total	[diagram]	incremental
I3a risk factor	decisive	[diagram]	negligible
b control of risk	ends	[diagram]	means
I4a short-term timing	important	[diagram]	irrelevant
b long-term timing	important	[diagram]	irrelevant
I5a tactics	force	[diagram]	negotiation
b dimensions of power	one	[diagram]	many

JOHN FOSTER DULLES AS A COGNITIVE DECISION-MAKER

REDUCED BELIEF SET

BELIEF	POLE	|---RANGE OF VALUES---	POLE
P1a political universe	conflict		harmony
d issues of conflict	linked		separable
e role of conflict	functional		dysfunct'l
P4 control of history	total		none
I3a risk factor	decisive		negligible
b control of risk	ends		means

The observations of this chapter are largely heuristic in nature, relying for initial motivation primarily on single notable policies or outcomes involving the actors examined, and subsequently on subjective inferences drawn from operational code studies or their surrogates, to reinforce the appeal of the methodology in each case outlined. Before attempting to collect observations and conclusions to be drawn from this effort, however, it remains to be determined whether the characterization resulting from the construction of an operational code profile has at least explanatory power in a more detailed review of the major policies and events associated with the decision-maker. Does the cybernetic model suggested as the 'best fit' for James F. Byrnes, for example, yield an explanation of his decision-making behavior which is more satisfactory and consistent than available alternatives would provide? The chapter which follows attempts this further step by tracing in the case of Byrnes the historical events which highlighted his tenure as Secretary of State, using the framework of the cybernetic model in an effort to satisfactorily explain and analyze his decisions and actions in that role.

CHAPTER 4

EVENTS IN CONTEXT

The turbulent period surrounding the end of the Second World War serves as the backdrop for the stewardship of James Francis Byrnes as Secretary of State, from 3 July 1945 to 20 January 1947. Despite the relative brevity of his tenure, circumstances combine to suggest significant value in the application of the operational code profile methodology under discussion to his case. Emerging triumphant and uniquely powerful from the war, the United States was faced during this period with the hard policy choices associated with its new role of leadership in the community of free nations; such an adaptive process necessarily generates the sort of stream of events over time most conducive to employment of the analytical framework developed here. The State Department, long neglected as a policy-making body by President Roosevelt, was ill-equipped to play a major part in this unfolding process, and the situation thus highlights Byrnes' style and performance as an individual decision-maker. Byrnes himself, clearly relishing his resulting autonomy, spent, by his own account, 350 of his 562 days in office in international conferences,⁵⁸ away from the capitol, and is hence exceptionally well-suited for study in isolation as a key policy-maker. The

⁵⁸ James F. Byrnes, Speaking Frankly. New York: Harper & Brothers, Inc., 1947; p. 245.

record should thus provide fertile ground for inferences of relatively high confidence regarding the consistency of the typological constructs developed in the preceding chapters.

Salient features of Byrnes' operational code have led to the expectation that his decision-making behavior can best be explained by the use of a cybernetic decision model. The simplest of the three, construction of such a model requires primarily just the identification of those few significant environmental variables which furnish the necessary feedback to modify behavior over time. The most cursory review of the record Byrnes brought to the State Department provides strong evidence of what these variables should be. A veteran of all three branches of the American government by virtue of service in both Houses of Congress, the Supreme Court, and the Office of War Mobilization and Reconversion under President Roosevelt, Byrnes was abundantly well-versed, at least in the arena of domestic affairs, with the politics of accomodation and compromise. His own writings are reple with such personal tenets as "good government lies in seeking the highest common denominator,"⁵⁹ and "in all relationships in life success and happiness can be achieved only by a willingness to make concessions."⁶⁰ The cybernetic actor thus equipped could be expected to focus on the

⁵⁹ Byrnes, op. cit.; p. 91.

⁶⁰ James F. Byrnes, All In One Lifetime. New York: Harper & Brothers, Inc., 1958; p. 5.

primary variables of the bargainer's art: the power relationships between the contenders, the weight of outside domestic opinion, and the tractability of the opponent. Latent interaction between these variables seems reasonable to expect, although treatment of such interaction in a deterministic rather than a stochastic sense can have dysfunctional effects on model behavior, as will become apparent shortly.

It remains but to impose initial conditions on the model; that is, to determine the source and substance of the 'SOP' or 'recipe' which would guide Byrnes' behavior pending receipt of effective feedback. The principal prior experience in foreign affairs which Byrnes brought to the State Department lay in his attendance with Roosevelt at the Malta and Yalta conferences, by his description "the high tide of Big Three unity."⁶¹ Although his participation was largely that of an observer, Byrnes saw at Yalta what he took to be the fruits of a conciliatory posture among the great allies. Compromise facilitated the formation of a provisional Polish government representative of both the government in exile in London and its Soviet-sponsored challengers in Lublin, with the understanding that free elections would soon follow. The Declaration on Liberated Europe committed the allies to seeking similar accommodations for other eastern European countries. Initial plans were laid for the San

⁶¹ Byrnes, Speaking Frankly, op. cit.; p. 45.

Francisco conference to establish the United Nations. Returning to Washington as an advance man, Byrnes proved to be an enthusiastic salesman for the accords, and generally favorable response by the Congress, the press, and the public seemed to buttress his enthusiasm. Five months later, although the initial euphoria was somewhat faded, Byrnes entered the State Department convinced that accomodation based on shared interests was both possible and desirable in his future dealings with the Soviets.

A scant three days after assuming the post of Secretary of State, Byrnes embarked with President Truman for the Potsdam Conference, with the expressed purpose of seeking renewed harmony:

"We wanted to reach agreement on four major issues: first, the machinery and the procedures for the earliest possible drafting and completion of peace treaties; second, the political and economic principles which would govern the occupation of Germany; third, plans for carrying out the Yalta Declaration on Liberated Europe...; and fourth, a new approach to the reparations issue."⁶²

To address the first issue, Byrnes had prepared a proposal for the establishment of a Foreign Ministers' Council which would formulate the general terms of the peace agreements for reference to committees of deputies for the actual drafting of treaties. The only point at issue being the extent of participation in the Council by France and China, this proposal quickly became the first approved act of the Potsdam Conference; ironically, it

⁶² Byrnes, Speaking Frankly, op. cit.; p. 68.

almost as quickly became the principal vehicle by which to mask continuing discords among the heads of state, since an issue unresolved soon became, euphemistically, an 'issue referred to the Council for further discussion'.⁶³ The Council thus rapidly outgrew its original purpose, becoming a forum for every aspect of American and Soviet interests and a primary conduit for the cybernetic feedback anticipated to influence decisional behavior.

Implementation of the Declaration on Liberated Europe was among the first of the issues so referred, both at Potsdam and in several succeeding meetings. Continuing disagreement swirled around the American position supporting free elections, particularly in Bulgaria and Rumania, counterposed with Soviet claims of governmental excesses in Greece. Underlying the former issue were progress on peace treaties and resumption of diplomatic relations with the two countries, both desired by the Soviets but not at the risk of reintroducing 'unfriendly' governments at their borders. Unable to discover the necessary quid pro quo formula for mutual agreement, Byrnes was forced to come away from this encounter with no more than a vague commitment to free press access to the affected countries.⁶⁴ This result should be expected to generate unsatisfactory

63 U.S. Department of State, Foreign Relations of the United States: the Berlin Conference, vol 2. Washington: US Government Printing Office, 1960; p. 328.

64 Ibid.; pp. 1478-1498.

negative feedback in the 'tractability' variable of the cybernetic model. Recalling that cybernetic changes in strategy can move randomly, however, it must suffice to suggest that this feedback increases the likelihood of some change in behavior; the specific direction of such a change remains to be determined, to the extent possible, by feedback in the other variables of interest.

Competing Soviet and American interests collided to complicate the issue of war reparations. Mindful of the post-World-War-I use of American aid to pay reparations bills, and having on this basis rejected the Morgenthau Plan to reduce Germany to the status of a 'pastoral country', Byrnes was determined that the defeated powers not be taxed beyond their capacity to support themselves. Predictably more concerned with their own reconstruction needs, however, the Soviets insisted upon the establishment of firm figures, specifically \$20 billion, of which they would receive half.⁶⁵ Both positions were further muddled by the *faits accomplis* which faced the contenders: by the time of the Potsdam Conference, a great deal of property and equipment had already been removed from Germany by the Soviets as 'war booty', and a sizeable portion of the eastern Soviet occupation zone had been turned over to the Poles for administration, as an apparent prelude to annexation. The

⁶⁵ State Department, Berlin Conference, op. cit.; pp. 1478-1498.

question of precisely what assets would qualify as reparations thus became an additional point of contention. The cybernetic impulse to maintain harmony through adaptive behavior is graphically realized in Byrnes' resulting proposal: each power would exact reparations from its own zone of occupation, by its own criteria. In order to compensate for the preponderance (60%) of industrial facilities in the western zones, and in apparent deference to the Soviet claim to half the reparations, Byrnes offered to transfer the 10% differential to the Russians - but under Western, not Soviet, criteria.⁶⁶ An additional percentage would be made available in trade for food and raw materials from the eastern zone. The result was clearly a pro forma agreement, preserving the shape if not the substance of the original arguments, but restoring at least some measure of harmony to the conference. The lack of goal orientation in this decision provides even weightier evidence of cybernetic processing, in that it plainly dealt a staggering blow to the American objective of eventual German reunification, but one which was either overlooked or ignored by Byrnes in forwarding the proposal.

The separation of issues characteristic of the cybernetic model would lead further to the expectation that this agreement, despite its heavily economic overtones, would have little or no impact on discussion of the remaining issue of German occupation

⁶⁶ State Department, Berlin Conference, op. cit.; pp. 1478-1498.

policy, and indeed, "agreement quickly followed on such matters as the economic principles to govern the occupation of Germany, including the compact to treat the country as an economic unit."⁶⁷ It rather strains credulity, in fact, to suppose that such a stark contradiction could have arisen from either of the other two models under examination: analytic processing would seem to exclude it almost by definition, while cognitive consistency argues strongly against it, given the consequent level of cognitive dissonance thereby introduced. The evidence suggests strongly, then, that Byrnes' initial policy-making encounter with the Soviets was guided by a cybernetic process of decision.

Byrnes' subsequent behavior, if cybernetically motivated, should vary with the acceptability of feedback in the channels identified earlier: relative power, domestic opinion, and tractability of the opponent. It has already been surmised that perceived Soviet intransigence on implementation of the Declaration on Liberated Europe generated negative feedback in the variable of 'tractability', but without firm indication of what direction the appropriate corrective strategy might take. Given the continued atmosphere of wartime allied cooperation which prevailed in July of 1945, outside opinion regarding the accords seems to have remained acceptably supportive, thus

⁶⁷ Byrnes, Speaking Frankly, op. cit.; p. 85.

offering no further signal for change. The Soviet-American power relationship as Byrnes perceived it, however, deserves further attention. At the outset of the Potsdam Conference, the relative military capabilities of the two players supported the quid pro quo bargaining strategy employed by the Secretary; but it was toward the end of this conference that word arrived of the first successful American atomic test at Alamogordo.

By the time the Council of Foreign Ministers met again in London in September 1945, the United States possessed a viable monopoly in atomic weapons and had used them twice against Japan. As indicated by his early resistance to initial efforts toward control of the new technology,⁶⁸ Byrnes evidently perceived in the atomic bomb a new American power position that would give direction to his revision of strategy. "Mr. Byrnes said ... he felt that before any international discussion of the future of the bomb could take place we must first see whether we can work out a decent peace."⁶⁹ Given the impetus for policy revision generated by Soviet intractability, and the direction motivated by a favorable new change in power relationships, then, cybernetic assumptions would lead to the expectation that the Secretary would assume a tougher bargaining stance at the next opportunity.

⁶⁸ Gaddis, op. cit.; p. 251.

⁶⁹ U.S. Department of State, Foreign Relations of the United States: 1945, vol 2. US Government Printing Office, 1967; p. 56.

The Council met in London in September for the purpose of drafting peace treaties, as its charter dictated; but many issues unresolved at Potsdam stood in the way. Progress on the Italian treaty, as a prime example, was blocked from several quarters. At Potsdam, Stalin had expressed incidental interest in acquiring one of the Italian colonies, preferably Tripolitania; his foreign minister, Molotov, now formalized this proposal as a request for Soviet trusteeship. Byrnes maintained that the trust should be a collective one under the auspices of the United Nations. Soviet claims to reparations again encountered American resistance based on the previous experience of footing reparations bills through reconstruction aid. Disposition of the Dodecanese islands stalled on the issue of demilitarization. Soviet-proposed adjustments to the Italian-Yugoslav border were rejected by Byrnes for their portended transfer to Yugoslav sovereignty of the port of Trieste.⁷⁰ The Secretary was not disposed to undertake this sort of linkage diplomacy in attaining an Italian peace treaty. Later, Byrnes would remark: "as far as I was concerned, Christmas was over - it was now January 1, and we had many bills to pay. Instead of issuing more IOUs, I wanted to collect some we held."⁷¹ The firmer negotiating posture predicted by the model is thus consistent with Byrnes' behavior at London.

⁷⁰ State Department, 1945, op. cit.; pp. 188-224.

⁷¹ Byrnes, Speaking Frankly, op. cit.; p. 105.

Additional issues addressed by the Council provide further support to this conclusion, and offer evidence of the cybernetic feedback to result from this encounter. In his continuing efforts to secure implementation of his perception of the Yalta accords on eastern Europe, Byrnes was stoutly rebuffed by Molotov's repeated contention that the governments of Bulgaria and Rumania were at least as representative as those of Italy and Greece, and the latter's imputation of anti-Russian motives to American pressure in this area. To Byrnes' protestations that "the United States is not interested in any way in seeing anything but governments friendly to the Soviet Union in adjacent countries", "Molotov replied that he must tell the Secretary that they did have doubts, and it would not be honest to hide it."⁷² Instead, Molotov maneuvered to exclude France and China from further discussion of the eastern European treaties, evidently to isolate the American perspective, and countered by opening the issue of establishing an Allied Control Council for Japan, which Byrnes was not prepared to discuss, having sought to concentrate on the European issues.

The conference thus ended in considerable disarray, without even agreement on the release of a communique; harmony was not served in the outcome, but hypothesized channels of cybernetic feedback certainly were. Byrnes' revision of bargaining strategy

⁷² State Department, 1945, op. cit.; p. 194.

had been shaped by his perceived change in the power relationships between the United States and the Soviet Union resulting from the American atomic monopoly, and he had clearly inferred a deterministic link between this variable and that of Soviet tractability, thus leading him to expect positive results of his tougher posture. The result in fact proved just the opposite: the Russians seemed if anything more intransigent than ever. The model should thus anticipate new values for each of the feedback variables to flow from this encounter. The stout Soviet refusal to recognize any change in the power relationships of the contenders exposed the fallacy of its purported deterministic linkage with tractability, thus returning the former variable to an acceptable value no longer promoting a change in strategy. The latter factor, however, moves even further into the unacceptable range, and while it would stretch the tenets of the paradigm to assign an effect based on the value differential, it may yet be observed that, the given change in strategy having failed to restore equilibrium, the next change should occur in the opposite direction. Reinforcing this notion is the incremental nature of cybernetic strategies, which would militate against any extreme of behavior such as an even tougher bargaining stance would represent.

The variable of 'outside opinion' deserves special attention at this juncture for its weight in the attribution of cybernetic behavior to the decision-maker. By the time of the London

conference, the atmosphere of allied wartime unity which had characterized American attitudes toward the Soviet Union had dissipated considerably, and Byrnes' firmer position was not only accepted but applauded in such key arenas as the Senate Foreign Relations Committee.⁷³ Under the assumptions of any other model, it would be reasonable to expect such a reaction to positively reinforce the perceived value of the policy choice undertaken; in a cybernetic process, however, this feedback qualifies simply as 'acceptable', thus neither promoting nor, in particular, inhibiting a further change in strategy. As a result, with continued Soviet intractability precluding the desired restoration of equilibrium, a new shift in policy back toward a more conciliatory posture should be anticipated.

Byrnes' anxiety to regain harmony through a revised strategy is evidenced by the haste with which he moved to organize another meeting of the Council of Foreign Ministers. Invoking the Yalta agreement that such meetings should take place every three months, he proposed a meeting in Moscow for December. His advocacy of this proposal further serves to reinforce the predicted isolation of feedback in the three variables being considered, which do not account for allied views. Byrnes' momentum seems to have been slowed not at all by a strongly negative initial reaction from the British: "Unilateral action

⁷³ Gaddis, op. cit.; p. 267.

[is] deeply resented by both [Foreign Minister] Bevin and Cabinet. Bevin refuses to talk tonight or attend conference [in] Moscow."⁷⁴ The French and Chinese were not even invited, in apparent deference to Molotov's earlier protestations for their exclusion, and Byrnes had taken steps in the meantime to recognize the provisional governments of Austria and Hungary as gestures of good faith. The stage was thus set for a meeting of conciliation with the Soviets, allied reservations notwithstanding, since negative feedback did not reach any of the available channels. Byrnes was convinced that the Moscow meeting would provide him more direct access to Stalin and thus shorten the path to renewed harmony that he sought.

The progress of the meeting itself seemed to reward Byrnes' aspirations. Having offered the quid pro quo of a Far Eastern Commission and Allied Control Council to give the Soviets a token role in the occupation of Japan, Byrnes obtained in turn from Stalin assurances of token broadening of the governments of Bulgaria and Rumania which would facilitate their recognition by the United States and thus enable the peace treaties to proceed. England's Bevin, who had finally agreed to attend the conference after all, had less success with the issue of Iran, where the government's request for the withdrawal of foreign troops had been met by the British but not the Soviets; the record suggests

⁷⁴ State Department, 1945, op. cit.; p. 581.

that Byrnes treated this question as peripherally as he did that of the control of atomic energy.⁷⁵ Having witnessed the failure of the American atomic monopoly to alter the power relationship, Byrnes freely offered a proposal which would establish the United Nations Atomic Energy Commission, and as freely allowed the Iranian question to slip by unmentioned in the final communique. Another pro forma agreement had been reached, and equilibrium was restored.

The harmony achieved at Moscow, however, was short-lived. Feedback in the variables of relative power and tractability had been restored to acceptable values, but outside domestic opinions resulting from the accords quickly moved outside that range. George Kennan, then Charge' d'Affaires at the embassy in Moscow, made a strong allusion to Byrnes' non-goal-oriented cybernetic behavior by remarking that "his main purpose is to achieve some sort of an agreement, he doesn't much care what."⁷⁶ Senators of the Foreign Relations Committee and Administration advisers were becoming concerned about 'appeasement', and President Truman himself was "tired of babying the Soviets."⁷⁷ The dissonance rose to a crescendo on 27 February 1946, when Foreign Relations Committee chairman Arthur Vandenberg delivered his "What is

75 State Department, 1945, op. cit.; p. 805.

76 Gaddis, op. cit.; p. 286.

77 Byrnes, All in One Lifetime, op. cit.; p. 402.

Russia Up To Now?" speech on the Senate floor, which implicitly but pointedly condemned Byrnes' conciliatory policy.⁷⁸ By this time, the assumptions of the model would already imply another forthcoming change in strategy, with its direction this time clearly indicated by the nature of the feedback in the system. Adding momentum to this impetus was a 9 February public address by Stalin stressing the basic incompatibility of communism and capitalism, and strongly suggesting the inevitability of war under the existing dichotomy of systems. These remarks, coupled with the unresolved Soviet presence in Iran, serve to indicate that the variable of opponent tractability was again slipping into the unacceptable range as well, thereby reinforcing the mandate for change.

By the time the Council of Foreign Ministers met again in April to prepare the way for the Paris peace conferences, Byrnes' revision of strategy was already clearly in evidence. In a major public address of his own, the Secretary had declared that "if we are to be a great power we must act as a great power,"⁷⁹ and had demonstrated this new resolve by firm if belated action to redress the Iranian situation. In Moscow Stalin had defended the continued Soviet military presence there as a hedge against

78 U.S. Congress, Congressional Record. Washington: US Government Printing Office, 27 Feb 1945; pp. 1692-1695.

79 U.S. Department of State, Department of State Bulletin, XIV. Washington: US Government Printing Office, 10 Mar 1946; p. 358.

sabotage of the oilfields in the northern province of Azerbaijan; evidence such as the use of Soviet troops to exclude Iranian troops from the area, however, indicated potentially more ominous designs. Through a complex series of diplomatic maneuvers including stiff cables to Moscow, press releases, and an appeal to the initial session of the United Nations Security Council, Byrnes made it clear that the case was not to be conceded this time,⁸⁰ and the Soviets, under pressure from all quarters, finally withdrew. Strong outside support during this episode, coupled with the more tractable Soviet response, suggest in the model a proximity to equilibrium unmatched since the Potsdam conference, which may have provided initial reinforcement of the new policy.

As if to institutionalize this process of reinforcement, Byrnes named to his Paris delegation Senators Vandenberg and Tom Connally, the ranking members of the Senate Foreign Relations Committee, thus incorporating key conduits of the domestic opinion that was to buttress his new policy. That Connally and Vandenberg would remain with the Secretary throughout the remaining Council sessions of his tenure is an interesting and salient observation, not because it represents an outcome predictable by the model but because it strengthens the basic assumptions of the cybernetic paradigm itself.

⁸⁰ U.S. Department of State, Foreign Relations of the United States: 1946, vol 7. Washington: US Government Printing Office, 1970; pp. 340-356.

The principal source of the imbalance arising from the Moscow conference was the delay in outside feedback, which reached Byrnes only *ex post facto* and thus generated a disequilibrium which could not be immediately addressed - a potential overload to the system. By attaching Senators Connally and Vandenberg, and thereby shortening his lines of communication, so to speak, Byrnes ensured rapid receipt of future feedback, hence improving the anticipated effectiveness of the cybernetic process through which his behavior has been conceptualized. By contrast, an analytic model would seek to assimilate divergent views *a priori*, while the cognitive alternative would militate against any systematic exposure to potentially dissonant information at all. This result thus seems consistent only with the assumptions of a cybernetic model of decision.

Byrnes wasted little time pressing his new resolve in Paris. As an early test of Soviet objectives, he revived and formalized a proposal discussed in passing both in London and Moscow for a four-power treaty guaranteeing the demilitarization of Germany for a twenty-five year period, intimating to Molotov that "frankly, there were many people in the United States who were unable to understand the exact aim of the Soviet Union - whether it was a search for security or expansion. Such a treaty ... would effectively take care of the question of security."⁸¹ The

⁸¹ State Department, 1946, vol 2, op. cit.; pp. 146-147.

implication was clear, and the private discourse which followed assured Byrnes that the Russians would reject the proposal. The next day, 29 April, the Secretary, over Molotov's objections, presented the draft treaty to the formal Council meeting, thereby solidifying his position for the months to follow.

Although this and other issues regarding Germany and Austria surfaced frequently during the conference, it was obvious from the start that insufficient common ground existed to form the basis for consideration and drafting of peace treaties for these countries; accordingly, attention focused on the remaining European treaties, with settlement of the outstanding Italian questions quickly emerging as the pace-setter for accommodations on Finland, Bulgaria, Hungary, and Rumania. The issues remained the same as in London the year before: reparations, territorial adjustments along the Italian-Yugoslav frontier including the port city of Trieste, disposition of the Dodecanese islands, and provisions for the former Italian colonies. True to his new strategy of 'patience with firmness', Byrnes let the entire first session of the conference go by without budging on any of these issues, remarking quite casually at its conclusion that "he hoped that the June 15 meeting would be more successful."⁸² As the second session convened he gave every evidence of the same disposition, with strong support from Connally and Vandenberg.

⁸² State Department, 1946, vol 2, op. cit.; p. 436.

Then in the Council meeting of 27 June the strategy seemed to pay off, as Molotov abruptly announced Soviet agreement to the cession of the Dodecanese to Greece, and before Byrnes had "a minute or two to recover", further agreed in substance to turn the Italian colonies over to the United Nations, thence implicitly relinquishing the long-sought Soviet trusteeship in the Mediterranean.⁸³

Impressed with these concessions, Byrnes proceeded to review the status of the remaining issues. Cybernetic feedback generated by the Soviet moves would suggest that accommodation was still possible. Convinced that the Russians would never agree to Italian sovereignty over Trieste, and himself determined against cession of the city to Yugoslavia, the Secretary now expressed some belated interest in a French proposal tabled some days earlier under which Trieste would be internationalized as a free port under the auspices of the United Nations. After a thorough final test of each others' resolves, Byrnes and Molotov finally agreed to this compromise on 3 July.⁸⁴ Neither had been able to attain his own goal, but each had prevented the other from attaining his - a trenchant commentary on the deteriorated state of shared interests, since this result coincides precisely with the mathematical definition of a zero-sum game.

⁸³ Byrnes, Speaking Frankly, op. cit.; pp. 131-132.

⁸⁴ State Department, 1946, vol 2, op. cit.; pp. 731-738.

The Italian reparations issue, in the meantime, had more or less resolved itself. The Soviet claim to \$100 million had already been recognized by the Council, with the sources of payment still at issue. Byrnes had argued consistently against the use of current production assets, which he asserted the Italians could not afford; at about the same juncture as the Trieste accord, however, the Italian government forwarded its preference for payment from current production in lieu of further removals of capital equipment, which it could even less afford. Uncomfortably isolated, Byrnes demurred, and the reparations issue was settled.

On balance, however, the strategy of 'patience with firmness' would seem to have proven a cybernetically stabilizing one. Power relationships remained in balance; improved Soviet tractability was evidenced in numerous concessions; and, perhaps most importantly, the new policy garnered strong domestic support at home. The President's support was particularly in evidence as the policy was challenged publicly by Secretary of Commerce Henry Wallace, a former Vice President with higher political aspirations, and something of a spokesman for the liberal wing of the Democratic Party. After some deliberation, Truman made the hard choice of policy over party and asked for Wallace's resignation. Byrnes was understandably gratified.⁸⁵ Given the attainment of

⁸⁵ Byrnes, All in One Lifetime, op. cit.; pp. 370-376.

equilibrium in the model and the reinforcement of consistently acceptable feedback in all available channels, then, the 'recipe' of 'patience with firmness' should be expected to persist as a cybernetic solution..

The policy did indeed persist, both within and without the Council negotiating forums. In Germany, the basic incompatibility of the reparations arrangements with the once-cardinal goal of national reunification was becoming increasingly apparent; a cybernetic orientation, however, would portend adjustment of the objective rather than the potential upset of a hard-won equilibrium. Consistent with these expectations, Byrnes announced in September that "if complete unification cannot be secured, we shall do everything in our power to secure maximum possible unification,"⁸⁶ thus tacitly sanctioning abandonment of the Soviet zone. Just the preceding month, the Secretary had strongly supported Turkish resistance to Soviet pressure for a joint military presence in the Dardanelles, a long-sought objective finally answered by the dispatch of American fleet elements to the eastern Mediterranean.⁸⁷ Again the Soviets conceded, thus providing further support for the policy by now widely accepted by his constituent audience and accordingly by Byrnes himself.

⁸⁶ U.S. Department of State, Department of State Bulletin, XV. Washington: US Government Printing Office, 15 Sep 1946; p. 499.

⁸⁷ State Department, 1946, vol 7, op. cit.; pp. 827-842.

As the Council of Foreign Ministers met once again in New York in November to implement the recommendations of the Paris peace conference, Byrnes' strategy was well implanted. The record of the first three weeks of this meeting is replete with 'exchanges of views' and 'deferrals' as the American delegation parried Soviet efforts to reopen the issue of Trieste and other matters thought previously disposed of.⁸⁸ Byrnes observed with some amusement the 'futuristic doodles' drawn by Connally and Vandenberg during Soviet speeches.⁸⁹ Finally Molotov arrived for a private inquiry regarding the progress of the Council; patience, it would seem, had paid off again, and Byrnes quickly followed with firmness, replying that "he had almost come to the conclusion that it would be better to admit frankly that they could not agree and announce their disagreement to the world."⁹⁰ His implication was clear - further American concessions would not be forthcoming - and the gambit apparently worked, as there followed, in stark contrast to what went before, a proliferation of agreements which eventually incorporated most of the peace conference recommendations.⁹¹ The five treaties were at last drafted; Byrnes had not attained all the American goals, had not even acted consistently in the long-range interests of these

88 State Department, 1946, vol 2, op. cit.; pp. 965-1256 passim.

89 Byrnes, Speaking Frankly, op. cit.; p. 151.

90 State Department, 1946, vol 2, op. cit.; p. 1264.

91 Ibid; pp. 1337-1559 passim.

goals, but had satisfied and maintained the cybernetic mandate for equilibrium, and provided as a result of this last conference a significant additional measure of reinforcement for the foreign policy 'recipe' he would bequeath to the Administration. Having tendered his resignation in advance some nine months earlier for health reasons, Byrnes left the Department of State with the signing of the peace treaties on 20 January 1947. 'Patience with firmness' lingered on, however, to evolve into the 'containment' policy which would shortly herald the institutionalization of the cold war.

The conceptual lens through which the decision-making behavior of James F. Byrnes as Secretary of State has been viewed portrays a clear pattern of adaptation versus direction, accommodation versus momentum. While such a pattern is in itself strongly suggestive of a cybernetic process, this same general result might arguably derive from the interaction of systemic variables associable with this period; the American impulse toward a return to isolationism confronting the mandate for its new role as a superpower, for example, has been employed in this regard. The specific nature of activity within this pattern and the resulting outcomes which served to shape that new role, however, can be conceptualized most lucidly at the decision-making level of analysis. It is at this level that the vacillating and often non-goal-oriented pursuit of policy development vis-a-vis the Soviet Union is most consistently explained by the

cybernetic model of decision, as applied to the contemporary Secretary of State.

Salient elements of Byrnes' operational code isolated by the methodology under examination led to the selection of the cybernetic model as the 'best fit' for this decision-maker; the historical record provides strong evidence in support of this selection. Byrnes' approach to the Soviets at Potsdam was essentially conciliatory; at the London Council of Foreign Ministers, more unyielding. At Moscow he was again conciliatory, but at Paris firm once more, and in New York firm yet again. This disparate sequence of policy behavior, and ensuing events such as the dismemberment of Germany, internationalization of Trieste, and divergent administration of the occupied countries, displays important processes and outcomes which would baffle an analytic or cognitive conceptual framework. The observed pattern is, however, entirely concordant with the assumptions of a cybernetic model regulated by feedback in the variables noted. The decision-making typology of the operational code profile thus seems a useful conceptual tool for explaining the decision-making behavior of James F. Byrnes and its critical impact upon postwar American foreign policy.

CHAPTER 5

CONCLUSIONS

This paper has attempted a brief review of the existing theory of individual processes of decision-making, with a view toward deriving means by which the behavior of a given actor might be systematically fitted to an available model of decision, for purposes of explanation and/or prediction. The principal models explored, and possible variants considered (but not treated), were those generically labeled 'analytic', 'cybernetic', and 'cognitive'. These models provided distinct if not exhaustive means by which to characterize the successive stages of the decision process, and hence differentiate effectively between disparate decision-making behavior and concomitant outcomes.

The analytic model was explored primarily from its prescriptive perspective, with some empirical variants noted. Value integration was observed to be the key formulative tool, through quantification and resultant preference-ordering of relevant outcome variables. Uncertainty is controlled through the assessment of relative probabilities of outcomes anticipated from available strategies, and through weighting of the ensuing expected outcome values according to the risk attitudes of the decision-maker. Both probability assessments and outcome values are progressively updated by assimilation techniques which ensure optimal diagnosticity of incoming data. Comprehensive evaluation

of all formulated options then yields a strategy which produces the greatest expected outcome value. In imputing analytic behavior to a decision-maker, complete rigor in application would clearly be exceptional; rather, expectations were focused on the conceptual characteristics inherent in analytic processes.

Formulation in the cognitive model was described as more intricately shaped by the decision-maker's belief system and its assimilative tools of inferential memory, internal consistency, congruence with the environment, and structural economy through simplicity and stability; these tools suggested a high level of perceived, if not actual, value integration, and a tendency toward categorical assessment of risk to reduce uncertainty. New information must be filtered through the existing structure of beliefs; revision is thus highly dependent upon data content, situation, update rate, and even time of arrival, so that optimal diagnosticity is unlikely to be attained. The evaluation process is governed by such inconsistency-management mechanisms as images and arguments from analogy, wishful thinking, and inferences of impossibility, so that choices are successively and categorically eliminated; in the logical extreme, the process concludes with but a single 'acceptable' choice remaining, or failing that, with few enough choices for coherent comparison of affected values. The key controlling factor throughout was determined as the maintenance of cognitive consistency through transformation or elimination of dissonant information.

The cybernetic model, finally, was found to articulate only those values essential to the equilibrium of the environment; attention focuses accordingly on a few key variables associated with these values, and lack of specific goal orientation obviates the need for direct outcome calculations entirely. Revision is guided by feedback in the key variables chosen, which registers dichotomously as either 'acceptable' or 'unacceptable' and in the latter case generates changes in strategy. Choice selection then proceeds, depending on the nature of feedback received, either by incremental change to the existing policy or by a random search of available 'recipes' or 'SOPs'. Successful SOPs were thus expected to persist over time, while others drop out of the system.

This effort to evoke the central features and characteristics of the principal decision-making models was directed at a determination of means by which the behavior of a given actor could best be explained or predicted among the alternatives available; there remained the development of a vehicle by which such a discrimination could be effectively made. The operational code construct offered such a vehicle by encapsulating in five 'philosophical' and five 'instrumental' beliefs the key elements of the decision-maker's attitudes and orientations, and hence propensities for patterns of choice behavior. From this construct a series of continua were devised to measure beliefs as ranges of values in the dimensions stipulated by the code. By examining

each of these dimensions for its marginal contribution to the decision process, a 'profile' was developed for each of the models reflecting the operational code content of the ideal decision-maker of each 'pure type'. Successive elements of the belief set were concurrently examined for their relative impact on the decision process and their stochastic relationships with other beliefs in the specific context of decisional patterns; inferences drawn from this exercise in what might be termed 'qualitative factor analysis' yielded a reduced belief set and corresponding operational code profile intended to capture the core determinants of decision-making behavior from elements of the first and fourth philosophical beliefs and the third instrumental belief.

Preliminary steps toward validation of a typology based upon the operational code profile were undertaken in an analysis of three prominent national security decision-makers. The selection of Secretaries of State Byrnes, Acheson, and Dulles was supported by their proximity in role and time, and the availability of operational code studies, or, in the case of Byrnes, a close surrogate, from which to construct their profiles. It was further anticipated that these three would furnish reasonable approximations of each of the three 'pure types' under investigation: analytic, cognitive, and cybernetic. By reference to existing results, then, operational code profiles in both full and reduced forms were constructed for each decision-maker.

The relatively close fit observed in the comparison of each case to the profile for the corresponding model, both graphically and by rudimentary quantitative measures, motivated a concluding brief exploration of the nominal utility of the typology as a means of explaining actual patterns of decision-making behavior. The case of Byrnes was selected primarily on the basis of economy of effort, in that the cybernetic model offered the simplest tool of analysis, and by a happy coincidence Byrnes' tenure in office as Secretary of State, the targeted period of analysis, was also the shortest in duration among the three. The historical record of policy development and evolution during this crucial period of the postwar era was found to reflect major trends and outcomes which could be satisfactorily explained only in the context of a cybernetic model of decision. The potential value of the methodology was thus realized in this instance.

It is perhaps inevitable that an inquiry of even such modest depth as this concludes with more unanswered questions than enlightening solutions. If the principal value of the effort is to demonstrate that these questions are worth answering, however, it will certainly have served its purpose. A number of suggestive issues have been raised or implied and bypassed in the course of the preceding chapters; a review of the most evident is offered here by way of an attempt at recapitulation and suggestions for further study in the critical realm of national security decision-making.

The typology developed here is, first, a highly simplistic one. Only the three 'pure types' have been treated in any detail, even though the possibilities for varying behavioral propensities are as complex as they are both reasonable and intuitively appealing. Even the reduced belief set, if it indeed represents a minimum essential determinant of decision-making behavior, and if only the three ranges of values corresponding to the three models are considered, permits some 3^6 , or 729, theoretically possible variations. If the six elements of this set are independent, as has been inferred, then all 729 should be empirically sound. This is not to imply that 729 different models should be necessary to provide an adequate descriptive base - a self-defeating proposition in terms of the tenets of an effective theory - but only that the significance of variations from the 'pure types' discussed here needs to be investigated more thoroughly.

The potentially disparate impact of such variations on the successive individual stages of the decision process poses a further order of complexity touched upon only in passing here. The possibility that different portions of the belief set affect different stages of the process in different ways cannot be discounted. One conceivable hypothesis is that the philosophical beliefs, which generally shape the actor's perception of the environment, should govern the stage of formulation, while the instrumental beliefs which guide action should influence the

solution stage. This proposition has some appeal in the abstract, but the truth may prove to be more complex when the sub-stages of diagnosis, search, revision, evaluation, and the decision rule are considered.

The viability of the effort to demonstrate interdependence among beliefs of the full set and thereby reach an irreducible subset of the operational code profile within the specific context of decision-making behavior was reinforced in the case reviews conducted, where the same or similar beliefs and characteristics were evoked in multiple instances to support the assignment of ranges of values for different belief continua. In no obvious case did such duplication occur between purportedly independent beliefs of the reduced set; on the other hand, it remains to be judged independently whether this reduced set would alone have sufficed to replicate the full set, or at least those additional elements deemed salient to decision-making behavior, with reasonable accuracy. The distinction between those beliefs asserted as interdependent and those expected to have no more than minimal impact on the decision process is an important one here. This question is further, of course, secondary to the proposition that the reduced set should lead to the same characterization of the decision-maker as does the full set, which is the real ultimate object. That this object was realized in each of the three cases examined here is suggestive, but hardly a matter of proof.

Operationalization of the models themselves is an area in which much remains to be refined. Explicit techniques which translate the general characteristics of the respective paradigms into clearly defined decision mechanisms are presently limited to the decision analysis procedure for the analytic model, the cognitive mapping approach for the cognitive model, and the simple homeostatic analogy for the cybernetic model, and little case work has been done to develop and exercise even these techniques as tools of analysis in the task at hand. Decision analysis has plainly undergone the greatest exploitation of the three as a normative device for optimal policy prescription, but is typically employed in business or engineering applications where values, risks and outcomes are perhaps somewhat more readily defined than in the complex calculus of national security. Additional case work employing these techniques and further explication and refinement of the techniques themselves on the basis of empirical findings can increase their analytical power to a new order of magnitude.

The operational code study itself, of course, serves as a centerpiece for the theoretical constructs explored here; it is the raw material from which the operational code profile is constructed and an appropriate model then fitted and employed to characterize the actions of the decision-maker. Fewer than a dozen such studies have been cited in the literature; many are unpublished papers to which access is consequently difficult.

Those which are accessible employ varying techniques to arrive at their conclusions, all involving exhaustive research of the actor's written and spoken record to infer the beliefs comprising the code. Content analysis is the generic term used to subsume a rather broad quantitative or qualitative approach to the process, and is in itself an analytical tool with ample room to grow in rigor and sophistication. Development of a uniform methodology and accompanying tools and procedures governing the conduct of operational code studies would greatly improve the cumulative value of their contribution to the available body of knowledge in this field. Any reduction such a methodology might achieve in the formidable research demands currently placed on such a study would likewise represent a much-needed step toward parsimony and a corresponding increase in the appeal of the paradigm. As means to an end, the purported mandate for such steps implies that the body of knowledge needs to grow. Availability of a wide range of operational code assessments of key decision-makers, inclusive of various organizational structures and fields of endeavor, would add richness and depth to potential applications of this valuable construct which are currently wanting. There is no intuitively apparent reason such applications should be limited to the field of national security, nor indeed to international politics; to the extent that unitary decision-makers need to be better understood, as advocates, as adversaries, or as figures of historical import, there is ample justification to proceed to further refinement and expansion of the methods and resources at hand.

The potential weight of additional evidence, finally, has far more than simple cumulative import. The methods and concepts employed in a principally heuristic sense here are motivated largely by the more elegant tools of statistical analysis. Not only the language of the discourse in which the decision models themselves have developed, but the validation of inferences, the determination of factors to establish relationships between interdependent variables, the analysis of variation in empirical observations, and the measure of goodness of fit of a model to actual data, all concepts invoked abstractly in the course of this study, have far more powerful manifestations in their pure analytical forms. The ability to employ them formally, of course, requires only a modest accumulation of empirical data - precisely that effort cited already as the area of greatest need at the present juncture. As additional methodologically uniform case studies may be conducted and their results made available, the data base can expand to a size at which statistical analysis can be brought credibly and powerfully to bear upon the multiple inferences and hypotheses formulated here.

The methodology of the operational code profile and the decision-making typology it proposes offer an embryonic attempt to achieve a modicum of structure in a formidably complex field of inquiry. The study of decision-making freely crosses disciplinary lines both in the breadth of its constituent components and the wide scope of its impact; few, if any, of the social and

engineering sciences are silent on the subject, and the dedicated literature accordingly grows exponentially over time. There can be little assurance that this effort does justice to that body of knowledge, let alone adds materially to it; but the quest for order and meaningful systematization is perhaps nowhere better justified than in as diverse a pedagogy as this. The underlying motive - better understanding of the decision-making process, for description, explanation, prediction, and/or prescription - is a persistent one which inspires continuing efforts to meet and overcome the attendant challenges.

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